A point of view

An introduction into a particular view on the human condition

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Preface

Four decades of research leaves its mark not at least as a flood of writings. A lot remained unpublished but an equally important quantity found its way to the public realm, some in printed form most as contributions on different academic websites. As a novice student in the broad field of human sciences I felt overwhelmed sometimes even desperate when confronted by the countless lines of thought, the mass of important scholars some of them even changing their view quite radically over time.
In that sense it does not come difficult to imagine that someone getting in touch with one of may proposals which actually does not follow main stream thinking, might feel somewhat lost. The following pages want to provide an insight in the frame of reference which gradually took form over the last twenty to thirty years. What I have expressed in writings can all be located in and understood against that background.

It consists of four parts.

It starts with an overview, a list of basic insights and positions taken in the field of philosophy and of science focussing on the subject of cognition. It questions how cognition could be understood, in what way does the human variant differs from animal cognition, and how that particular mode could be brought into being. This makes of the first part an overall map, a background reference while the others function as illustrations built onto that frame of reference.

The contribution with the provocative title “From ape to man” illustrates two important subjects. On the one hand it exposes the line of argument; how different premises and positions taken allow constructing a particular approach. On the other it explains how a change in the way the Umwelt became negotiated also changed the organisation of perception and cognition. A new template rose from a thorough practice of mediated manipulation. It changed the world of events lived by animals into a world of manipulable objects handled by the human species.

Every exposition starts from out a particular perspective, feeding a particular way the world is getting understood. With this in the background two premises are in play.
First if every version or interpretation of the world is but a version, the very first question should focus on how a version as a version is brought into being, how it technically is realised, what are the conditions of possibility etc. In short, the level in question is that of technique and not on the justification of a particular semantic content.
Secondly from a very different corner, if survival is the very first objective then it is the form and the abilities following from the form of the organism acting in the open environment having to prove survival value. It is all about a matter of action and how to act, in short: technique.
That is the tenet taken.
However mainstream versions float on storylines in which concepts with a historical origin provide the beacons guiding thought.
It is evident that in order to understand the processes of action as clean as possible it is necessary to be aware of these historical wrappings.
In this third part an excerpt of a larger contribution will be offered sketching out how the concepts of mind and inner life came into being as parts of particular historical changing contexts.
Boldly said, there is no such thing as an intransitive instance called mind nor an inner dimension or inner theatre. These are concepts based in history.
Being fictions does not allow inferring uselessness. In the period these have been brought into existence they fulfilled a necessary component in the understanding of the human being in the world. Actually they seem still to fulfil that goal, witness the abundant use of terms such as mind and mental, the inner life, conscience as the inner instrument of evaluation etc.

The fourth and final part offers an overview of the different books which in some form are available on the World Wide Web.

I. Overview of insights and positions taken

The following offers an overview of core ideas, primary premises, basic principles and methodological points of view taken which are at the heart of the ongoing research.
I thought it would be useful to bring these together in one summary.

This will take the following steps:
- The aim
- Theoretical framing versus how it really went
- Methodological guidelines and constraints
- Foundational assumptions
- Insights of importance in random order
- Schemes
- Insights and hypotheses raised in The Forgotten Transition
- Some misconceptions in mainstream thinking
- The relation and the value of the main hypotheses

The aim

Taking Darwin serious the question arises in how a common ancestor might have given rise to a branch which in the end would result into the human we are familiar with present day.
Roughly spoken the research develops along two tracks. Reconstructing the successive phenotypes focussing on anatomy attracts most of the public attention. The second track looks at the coming into being and development of capabilities considered typically human such as the particular way of bringing forth stone tools and language. Here too two tracks occur. One is more relying on argued inspiration such as in the case of Merlin Donald (mimesis) and Steven Mithen (cognitive fluidity). The other branch has a strong relation to artefacts unearthed allowing to make deductions about the cognitive moves and strategies involved in the production of these (Thomas Wynn, F.L. Coolidge, Christopher Henshilwood, Lambros Malafouris).

As the particular character of human tools provides the stepping stone into the research conducted, the path followed is more in line with the latter branch.
In a single sentence, what do the tools attributed to human ancestors reveal about the cognitive techniques they mastered keeping in mind that it all started from an apelike type of cognition?

The domain

Cognitive archaeology focuses on cognitive development as the most important strand underlying if not driving anthropogenesis. Demystifying historical based interpretations is however considered a necessary methodological tool, by this entering the province of philosophical anthropology.

Theoretical framing versus how it really went

The previous paragraph on the aim introduces the impression of natural and discursive ordering. All started with a problem needing an answer, followed by a long lasting research and ending with a solution. It seems a neatly ordered presentation. But that is not how it really happened.
To start with the preceding period is of essential importance. From the early years on there was an interest in human communication and language resulting in an in-depth study of on the one hand communication and on the other linguistics in all its colourful aspects. In a later project the cognitive abilities of animals absorbed a lot of attention, in particular the cognitive abilities of great apes. Having finished the said project there was no intention to engage the problem of anthropogenesis. An accidental confrontation with an Acheul type tool sparked a light bulb moment. The form perceived did not fit what I knew about animal cognition. This observable characteristic belonging to a product of hominin manipulation must have been held on some distance allowing to evaluate the effects of the blows executed. This implied consideration, an attitude of "aboutness" according to the previous research not present in animals. It seduced to engage into a new project. With the foundational assumptions which will be listed further in the background, the research focussed on the motor abilities opened by the phenotype bringing forth behaviour in the public arena. It allowed realising a glimpse on the cognitive perceptive patterns needed.

The ordering of the findings and conclusions in a kind of a natural looking flow only came at the end of the project.
Of even greater importance, the depiction brought forth from this enterprise should be taken as a cross section of an operational setting "what is needed to do x generating y as an effect" rather than an attempt to sketch out a genesis, a historical reconstruction of how it all became possible. The latter could easily become suggested by the description of successive steps as in objectification followed by displacement. But again, the stress should really be on the description of procedures in the cross section of an operation. It is important to keep this in mind to rightly understand the insights and positions taken listed below.

Methodological guidelines and constraints

1. Basic perspective

If the human is an animal species amongst other animal species, his way of negotiating the world will be decisive in order to survive. In other words the focus will be on the particularities of the body opening specific abilities allowing responsive behaviour in relation to the changing conditions of the immediate environment. This contrasts with the mainstream orientation giving the bulk of attention on the workings of the smallest of constituents in the deep i.e. the neural activity in the brain hidden by the vault of the skull.

2. The character of the sources

As explained all attention will be directed on observable behaviour rejecting any suggestion of invisible sources or mysterious interventions. Evidently the impact of mutations is recognized however bracketed as the aim is to find out how far one can get in producing an explanation by exclusively focussing on what is ready at hand.

3. The view on the shared initial condition

If the human is in principle a animal amongst animals, a view on the shared initial condition is necessary. At first glance an impossible task but we might not be as helpless as often suggested. The following sources are within reach:
- studies in ethology
- studies and reports in the field of developmental psychology
- efforts in making robotics and bringing forth intelligence in an artificial way

- the observation that animal heuristics (intelligence) transcend that of an automaton
- making abstraction of abilities considered strictly to be human
(forty-two features characteristic for the shared initial condition have been listed so far)

4. Cognition as a characteristic of public performance

Focussing on the public performance the attention goes onto the embodied character of cognition, the body being the manifest key locking into the environment; the environment in turn as the source referring to meaningful clues in relation to the needs of the primary motivations and/or relevant experiences from the past. The latter fits the approach of enaction and the view that there is not a radical rupture occurring between organism and environment but that both constitute one overall unity.
(in short the 4 E's: embodiment, extension, embeddedness and enaction)
This contrasts with the mainstream view that cognition is a product of the brain considered as a computer at least functioning as one and by this taking the role of control centre guiding behaviour.

5. Operationalism (a)

Connecting again to the stress on behaviour in the public arena, explanation will take the form of description of procedures and operations against the mainstream approach redefining correlations as neural sources from which typical human abilities emerge.

6. Operationalism (b)

In stead of gauging into the nature or the essence of some instance, the question will focus on the operations enabling the condition that instance occurs in.

7. The primacy of Gestalt-psychology

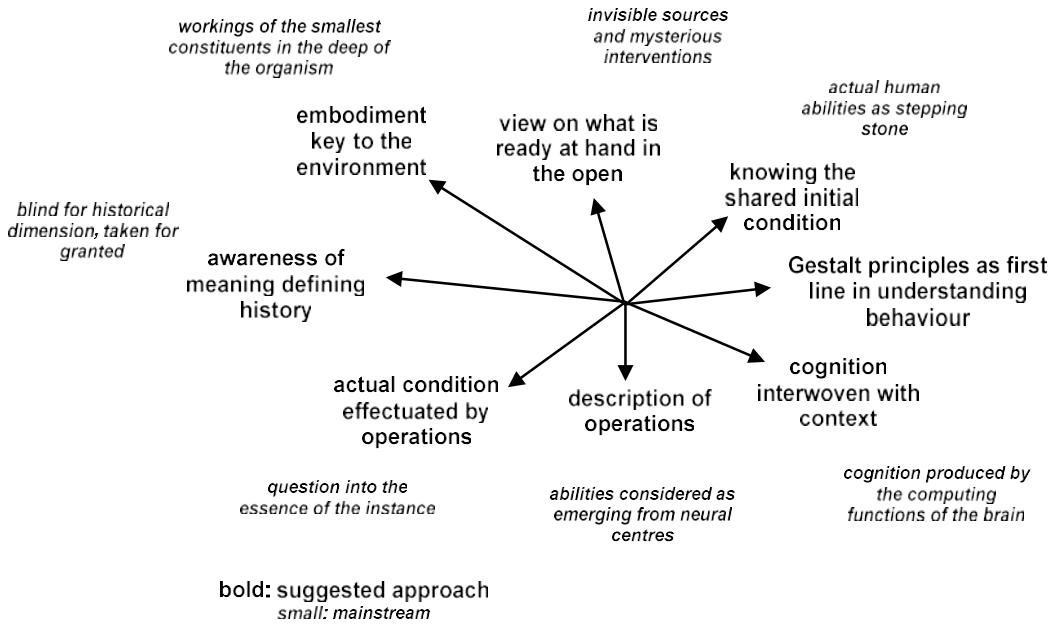
In first instance behaviour is best understood in terms of the dynamics of Gestalt psychology.

8. Awareness of the historical context of meaning

Any explanation in the end comes down to a particular version. This is an unavoidable fact. Versions can be ordered on a continuum going from descriptions restricted to the summing up of operations on the one end and on the other meaningful depictions with a regional and historical provenance or flavour. As the aim is to provide descriptions of

operations raising a particular effect it is essential to have knowledge of historical versions enrobing the operations mentioned. That kind of awareness helps to unveil the said operations. The following illustrate historic based biases:
- there is something like an essential character (the question into the essence of…);
- the duality of mind and body;
- the suggestion of a secular mind which can be functioning in a defective way (Locke);
- the idea of an ultimate truth corresponding to the world as observed by an independent instance (germinated with Plato);
- the "Galilean" appreciation of an object (redefining the Aristotelian version);
- the brain as centre of the organism (Willis);
- the final reduction to matter and interaction of particles (Mersenne, Hobbes…) focusing on the workings of the smallest constituents hidden in the deep of the organism (Galileo in the Assayer);
- considering these as the essential causes of behaviour and the condition the organism finds itself in (Thomas Willis) etc.
An approach like this comes down for instance by appreciating that dualism should be understood as a historic interpretation and not as a factual or natural occurring condition.

Schematized


workings of the smallest constituents in the deep of the organism
invisible sources and mysterious interventions
actual human abilities as stepping stone
embodiment key to the environment
view on what is ready at hand in the open
knowing the shared initial condition
blind for historical dimension, taken for granted
awareness of meaning defining history
Gestalt principles as first line in understanding behaviour
actual condition effectuated by operations
description of operations
cognition interwoven with context
question into the essence of the instance
abilities considered as emerging from neural centres
cognition produced by the computing functions of the brain
bold: suggested approach
small: mainstream

Foundational assumptions

A few assumptions or representations are so plausible that they reasonably seem impossible to refute and by this fact provide the most basic and comprehensive frame of reference guiding understanding.

1. Darwin's sketch of the tree of descent suggests a common ground for all species. Sitting on the same branch, the human belongs to the family of great apes. This cannot be overlooked.

The drive to survive expressed in the negotiation of the fluctuations of the environment is similar for all living organisms; drive and fundamental strategies (accaparating what is useful, avoiding what could harm, the urge to procreate) are the same. Often overlooked is that considering the tight kinship with at least the great apes, the way of cognizing must also have been similar. Darwin in the Descent of Man already observed "the mental intuitions must have been the same" (chapter 3). This provides a probably not all that easy accessible but certainly not mysterious perspective on early modes of cognition, a subject which as has been mentioned in the introduction is at the heart of this project. In short, the core is the shared cognitive condition with the species most akin.

2. Another idea equally fundamental is borrowed from Kant. The way the world is perceived is organized by the structure of the mind, so he explains. In a more contemporary wording, the suggestion of a mind could be exchanged for that of embodiment. It goes without saying that the body is the selective and filtering means to bring the environment as phenomenon to life. Further, whatever the possibilities opened by any instrument, that instrument is a closed system determining what can be processed.
Both insights joined, the human perception of the world is in a definite way determined by being an embodied animal, a condition shared with all other species. This does not only come as the most plausible depiction of the initial human condition; it is a mystery how it could be refuted at all.
This provides the breeding ground from which all understanding has to rise. It harbours the following observations:

a. The way an organism perceives the Umwelt determines the way it will behave.
This principle already implies an indication for an answer on the problem living tacitly in the background: understanding human behaviour not on the level of the personal psychology but on that of general anthropology. To that end the first principle suggests gauging into the way the human as a species perceives his Umwelt. Here we are not completely ignorant as will be pointed out by the second principle.
b. The specificities of embodiment open the abilities, at the same time defining the limitations of the way the Umwelt is getting negotiated by a particular species. In the case of the human the erect posture following from the bipedal gait and the abilities opened by the grasping ready hands characterize the human approach.
c. With that in mind the system or logic of the motor abilities determines form and character of the shapes gaining saliency in the visual field. This is the stage in which in the case of the human a form is taking delineation by the fact that it answers to and complements with the characteristics of the grasping hands. Through a gradual process of generalisation and abstraction this form will become recognized as “object”.
Concluding, the focus in this approach will be on the abilities opened by the phenotype and what complementary answers as an affordance to this condition. Deviant from the mainstream thinking it will not be on the workings of the “corpuscules” deep under the protection of the thin bone vault.

Insights of importance in random order

- Taking into account that whatever the cause – maybe a mutation, the form of the body or the behavioural response has to prove viability and efficacy in the public arena.
- The way an organism understands - that is gives meaning to - turbulences, determines the way it will behave responding (*phenomenal pragmatics*).

Large scale: The way the environment and its conditions are understood determines the way of action taken

Smaller scale: The meaning of the Umwelt is defined by the condition of the primary motives at a particular moment and by the abilities within reach of what the body allows. As such the meaning of the world is a construct.

Hence the indication as "phenomenal pragmatism" referring to the way the environmental turbulence is getting understood by this determining the action undertaken.

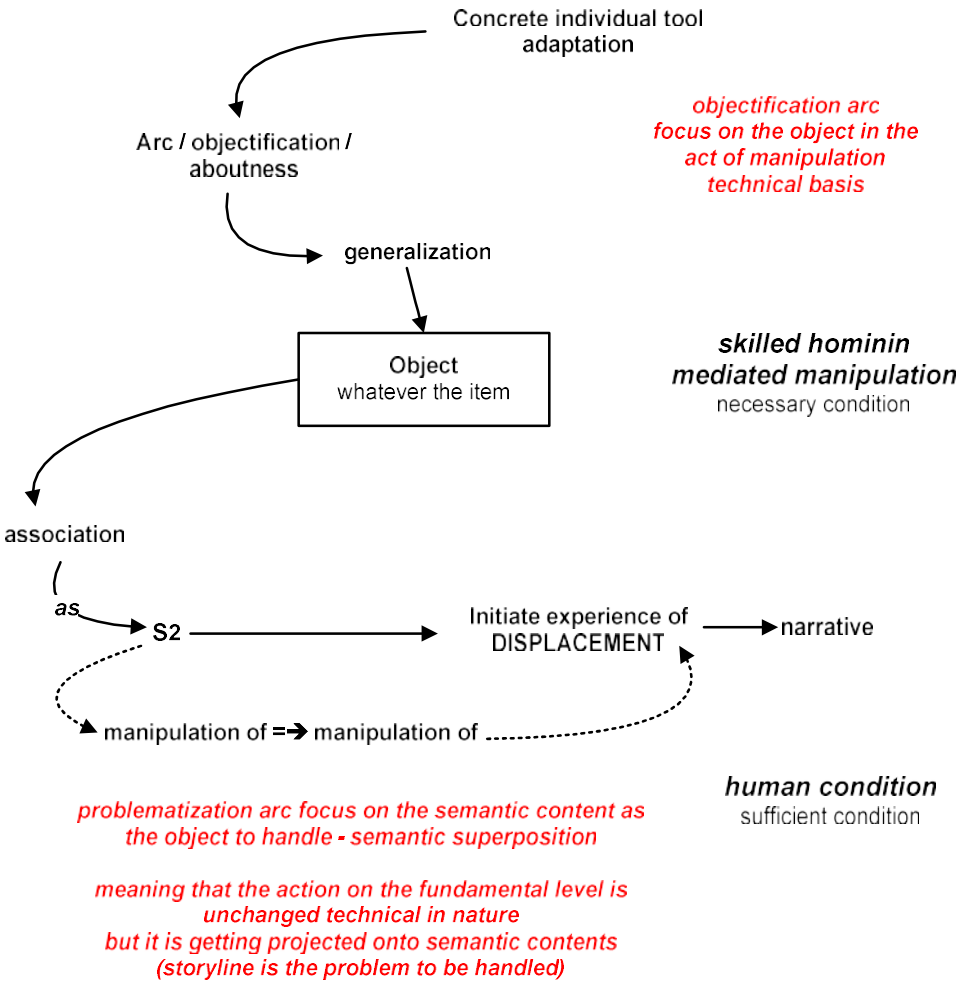
- Across species any organism evaluates his position in meeting others and regulates the relation accordingly. This regulation of relation is so engrained that is part of being alive itself. (idea borrowed from Watzlawick, Bavelas and Jackson; 1967)
- Importance of context, ecology, niche… in determining behaviour on a broad scale exerting pressure on phenotype and on a smaller it has an impact on actual behaviour.
- The way the human fulfils these fundamental drives differently from other living beings can be understood by focussing on ways of how he is doing things in the public arena, in particular how he is doing things differently as Richard Leaky proclaims.
- The human organizes his understanding of the world differently compared to species most akin. This difference followed a change in bodily orientation, walking tall, the hands relieved from the burden of supporting locomotion. Another body posture provoked another perceptive cognitive stance introduced another way of responding to the challenges.
- There is no other animal than the human making use to such an overwhelming degree of action supporting implements in negotiating the burdens of existence.
- The human particularity is not present as a mysterious inner capacity generated by some instance such as a brain which for that purpose is considered to be a kind of Aladdin's lamp. The substrate for that particularity is right in front of man. It shows

itself as an increase of possible stimuli i.e. objects, in numbers as well as in kind in the perception.
- The "object" took its particular form very gradually, spread over an enormous window of time spanning 50.000 to 100.000 generations. One could as well say that the world of events was left at the same gradual pace.
- The focus on mediated action offers procedures, explaining how effects are realized.

Concerning displacement and declarative information
- Self initiated imaginativity is the experiential dimension of a cognitive organisation for which objectification is the necessary condition.
- Being able to choose out of different alternatives is an effect of the introduction of objectification.
- Lingual practice in its core features is a mode of mediated manipulation (qua structure, dynamics and effect).
- Information is a dimension of displacement.
- The very slow development of the early tools veils a cognitive development whereby the importance of information repulses the impact of ecstasy.
- Lingual practice drafts a virtual world.
- The common way of thinking about language and communication, whereby all living organisms have the intention to communicate and dispose for that purpose of some kind of language, bears the statute of a tacit and natural evidence and is in that capacity effectively projected onto all living creatures.

Schemes

Two stages into the human condition


Concrete individual tool adaptation
objectification arc
focus on the object in the act of manipulation
technical basis
Arc / objectification / aboutness
generalization
Object
whatever the item
skilled hominin mediated manipulation
necessary condition
association
as
S2
Initiate experience of DISPLACEMENT
narrative
manipulation of => manipulation of
human condition
sufficient condition
problematization arc focus on the semantic content as the object to handle - semantic superposition
meaning that the action on the fundamental level is unchanged technical in nature
but it is getting projected onto semantic contents
(storyline is the problem to be handled)

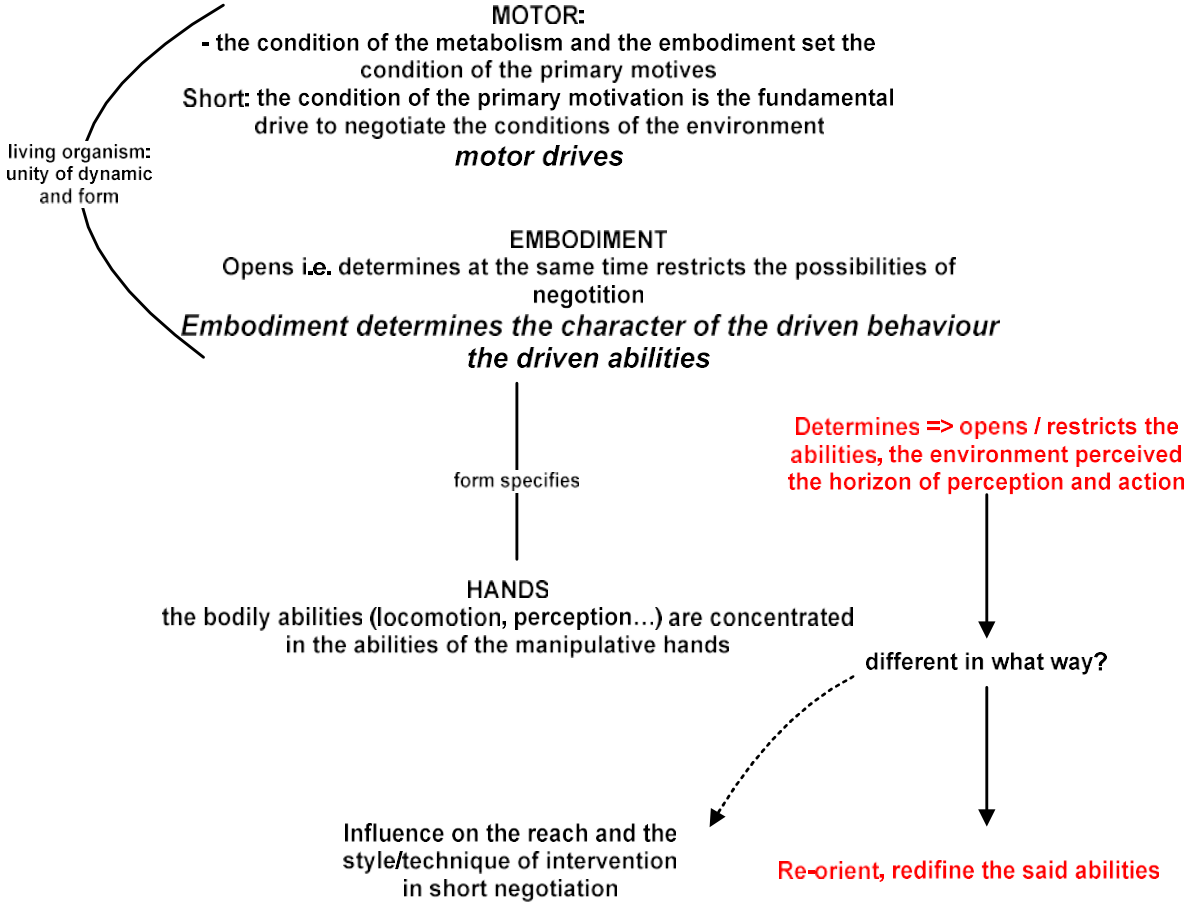
An ideal representation

The well known sketch in Darwin's notebook depicts a bush with branches representing an idea on the relation of the different species. In reality it should take the form of an enormous treetop with enumerable branches.

In relation to the ordering of fossils which could be considered to be ancestral, a similar but more modest structure with the character of a treetop with many branches is getting presented.

However the suggestion concerning the development of cognition is often represented as a rather linear flow. It will be clear that this is an artificial construction suggesting a stepwise development which might be plausible but has absolutely not the pretention to depict a real linear development. In so far the suggestion makes sense the real pace and distribution over the different branches of hominin is in no way clear. As such the

representation is ideal hence very different from the paleo-anthropological endeavor to relate the different fossils unearthed. "Ideal" has to be taken in the Platonic sense.


MOTOR:
- the condition of the metabolism and the embodiment set the condition of the primary motives
Short: the condition of the primary motivation is the fundamental drive to negotiate the conditions of the environment
motor drives
living organism: unity of dynamic and form
EMBODIMENT
Opens i.e. determines at the same time restricts the possibilities of negotition
Embodiment determines the character of the driven behaviour
the driven abilities
form specifies
Determines => opens / restricts the abilities, the environment perceived the horizon of perception and action
HANDS
the bodily abilities (locomotion, perception…) are concentrated in the abilities of the manipulative hands
different in what way?
Influence on the reach and the style/technique of intervention in short negotiation
Re-orient, redifine the said abilities

This scheme depicts the drive as the impetus forcing the dynamic, the embodiment opening at the same time closing off the particular abilities and in last instance, the development of the hands stimulating specialization of the negotiation at large, joining specific motor capabilities with accompanying specific perceptual-cognitive organization.

Hypotheses and insights raised in The Forgotten Transition

1. On the introduction of the object

- This research revealed an insight surprisingly absent in main stream publications on the subject of cognitive development in evolutionary perspective, hence the title of the

book. The character of hominin-human made tools differs clearly from those brought forth by non-human species, even these most akin. That observable difference suggests an accompanying difference on the level of perceptive-cognitive organisation. While for the non human animals an event character following purely the guide lines explained by Gestalt psychology, the environment of the human seemed to focus on the manipulability of stable configurations, commonly labelled as objects.

- The suggestion that "object" should be considered a concept and not a unit appearing in a natural way in the environment finds confirmation in research in developmental psychology, therapeutic interventions with blind people and is also proposed in early publications in the field of Gestalt-psychology.
- Hence the term object is not a neutral denotation. It originated in the context of thorough developed manipulation and since then perceptually projected onto – better still defining the world as a set of manipulable entities. It implies that the meaning of the term always should be understood against a context of manipulation, the latter not as an abstract concept but directly related to the negotiating organism, in particular the abilities, direct as well as projected, of the hands
- The mainstream approach plainly takes the world full of objects as the null hypothesis. But the potential of the object as a concept can only be described and rightfully appreciated, when the features of it – as a pattern – are getting compared to the features of a world full of events. (…) In so far as one refuses to take the difference in the way the world is getting experienced into account, one will be doomed to accept the typical human condition of being able to contemplate as a magical-mythical issue.
- The "object" took its particular form very gradually, spread over an enormous window of time spanning 50.000 to 100.000 generations. One could as well say that the world of events was left at the same gradual pace.

2. Miscellaneous

- Self initiated imaginativity is the experiential dimension of a cognitive organisation for which objectification is the necessary condition.
- Being able to choose out of different alternatives is an effect of the introduction of objectification.
- Lingual practice in its core features is a mode of mediated manipulation (qua structure, dynamics and effect). As such the ability to transfer information declarative in kind is carried out as a skill.
- Information is a dimension of displacement.

- The very slow development of the early tools veils a cognitive development whereby the importance of information repulses the impact of ecstasy.
- Lingual practice drafts a virtual world.
- The common way of thinking about language and communication, whereby all living organisms have the intention to communicate and dispose for that purpose of some kind of language, bears the statute of a tacit and natural evidence and is in that capacity effectively projected onto all living creatures.
- The human particularity is not present as a mysterious inner capacity generated by some instance such as a brain which for that purpose is considered to be a kind of Aladdin's lamp. The substrate for that particularity is right in front of man. It shows itself as an increase of possible stimuli in numbers as well as in kind in the perception.

Misconceptions

In The Forgotten Transition a chapter discusses some misconceptions in the mainstream thinking on the character of language and communication, such as:
- each organism communicates
- the fallacy of the communicative intention
- language, an intransitive faculty
- the apparent identity of speech and language
- human language as an expansion of non verbal communication
- focus quasi exclusively on information
- anthropomorphizing is ever-present
- the tendency to naturalize

The heading "Methodological guidelines" also holds mainstream beliefs expressing historical based biases.

The relation and the value of the main hypothesis

This project resulted in two different however related insights which could be considered in terms of hypotheses.

The first and in my opinion most important is about the reorganization of input into a configuration a lock and key fitting manipulation, a configuration acquiring "object" as label, a way of "seeing" the world differently compared to other species akin.

The second hypothesis points to a particular use of the said object. As subsidiary or as Vygotsky coins a 2nd order stimulus, it allows to introduce content in one's experience.

Two observations are in order.
On the level of cognition, as the key of negotiating the environment, the hypothesis on objectification comes first. It further provides the necessary condition on the way of bringing forth human characteristics. First and necessary are the key words.
The 2nd hypothesis on the procedure or skill provoking displacement in time and space in the experience is the sufficient condition to realize the features which will characterize the human i.e. transferring information and by imagination extending the world experienced.
Concluding: objectification is the necessary condition, displacement the contingent but the sufficient condition for the realisation of the exclusively human approach of the world. The qualification contingent stresses the character of accidentality. Despite it needed the first step to come into being, even then it did not have to do so.
This depicts the nature of the relation between both.

The second observation wants to highlight the importance of the hypothesis on objectification.
It is easy to understand that the second hypothesis on displacement could be taken as considering language. This without any doubt is a much debated topic hence easily provoking a burst of resistance.
However I am convinced that the suggestion offers a viable representation, I consider the first hypothesis as essential. That is the base line.
Even if the second hypothesis might be rejected it does not imply the weakness of the first. The operations rendering the template of object, thus reorganizing the environment perceived into a set of manipulable objects lies at the heart of what it is special in being human.

II From ape to man

A documented hypothesis

The problem

I. Lessons from robotics
I.1. Cambrium intelligence
I.2. Quotes
I.3. Common basis
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III. Stone tools

IV. Conclusion

Synopsis

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Short abstract

Is the question into what causes the human species to be special not the most intriguing puzzle which could be imagined? Three interlocking steps will suggest objectification as an appropriate catalyst. Brooks' distinction between basic and true intelligence (1999) corresponding with the difference made by Gilbert (2018) serves as stepping stone (I). Comparison of both conditions presents a schematic construct of some entity embedded in a pattern of mediated manipulation (II). Thus far no more than a theoretical inference, it finds a material complement in the tools used by humans (III). This development suggests a transition which apparently escaped the general attention, hence *a forgotten transition* (IV).

Abstract

Is the question into what causes the human species to be special not the most intriguing puzzle imaginable? Three approaches will be taken to investigate this conundrum.

Preliminary remarks on cognition based on findings in the field of robotics made by Rodney Brooks in his book Cambrium Intelligence will open this contribution. It is followed by an important note on the historic defined theory laden character of the contemporary understanding of the concept of cognition. A second note making use of Escher's picture "The Waterfall" as an analogy will draw the attention to the difference between the technical operation and the effect it raises. The idea is to emphasize the importance of the former as such bracketing the historic theory laden appreciations mentioned (I).

The actual analysis and evaluation begins with a comparison of the way the human organizes perceptual input into a meaningful phenomenal scene in contrast to that raised by an animal. The expectation is that this opens a perspective on the difference making the difference (II). The phenomenal scene perceived by the modern human will testify of a reorganization of input into stable meaningful entities. These are not non-committal but find reflection in the particular character of human made stone tools (III). The latter provide the material side to a conceptual dimension. Both collapse into one unit. It will therefore be suggested that objectification as the perceptive cognitive reorganization of input is an important linchpin, if not the catalyst into the mode of cognizing characterizing the human.

Keywords: action theory; anthropogenesis; cognition; constructivism; ethology; embodiment; niche; paleo-anthropology; robotics; tools.

The problem

How did a creature in origin an animal acquire human abilities?[1] That is undoubtedly the puzzling conundrum. This contribution is certainly not the first on this subject. Stoczkowski already in 1994[2] analysed twenty four different scenarios in that respect.
The following insight will hopefully contribute in understanding the difference making the difference. Surprisingly this insight did not seem to appear in publications as far as I could determine. Hence "The Forgotten Transition" as title of the book published (2018). The present contribution wants to isolate and clarify the core of the idea. Rodney Brooks with "Cambrian Intelligence" provides a suitable stepping stone[3].

But first a remark about the perspective taken should be made.
An observation followed by an explanation takes place from within a certain frame of reference constituted by history based discourses, making use of concepts with a particular semantic payload. Or whatever the version at offer, it is framed in a certain theory[4]. In that respect three options occur. The theory is presented as if there is no frame of reference. Or clear positions are taken and presented as the natural conditions. Thirdly a version is preceded by making clear background assumptions. The last option is the path chosen. The point to be made – that a transition on the perceptive cognitive level fell out of sight of the community – will be preceded by some critique on mainstream perspectives followed by a clarification of the positions chosen. Only then will the proposed come fully to light.

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[1] Focussing on animals Ingold (1994) opens a perspective on what is typical human.
[2] The translation dates from 2002.
[3] AI and robotics as source of inspiration have in "The Forgotten Transition" been mentioned in general terms. This will be discussed more in detail here.
[4] Thomas Kuhn. 1962; Paul Feyerabend. 1987; N.R. Hanson. 1965.

I. Lessons from robotics

I.1. Cambrium intelligence

The book "Cambrium Intelligence" by Rodney Brooks (1999) offers an appropriate steppingstone. It comments on artificial intelligence and also on the appreciation of the brain as a computer like information processing unit. Thirty years later these ideas are still at the core of the thinking about the faculty of human knowing. According to Brooks "The traditional Artificial Intelligence model of representation and organization along centralized lines is not how people are built" (1999: 163). This offers a fruitful steppingstone into bringing a particular transition to light.
Relevant quotes will be summarized below. Mentioning these voices positions favoured, but is none the less open for critical nuance.

I.2. The quotes

A basic evolution of intelligence has taken an enormous span of time compared to the specific development of the human form (1999: 81).[5] The core of it is about moving around in a dynamic environment, sensing in order to fulfil the most primary motives. That refers to survival and procreation, actions animals are fully engaged in (ibid. 81, 115-6). There is no central representation, not even a central system, let alone that symbol based representations would occur (ibid. 88-9). Instances of intelligence are grounded in the physical world (ibid. 114-5). [(As such robotics should) not (be) organized as central system but as activity or skills - being patterns of actions with the world - producing subsystems connecting sensing to action.][6]
This is the hard part of the development eventually providing the scaffolding for symbol based representations in turn providing acceleration of the further development

[5] Brooks pinpoints intelligence on the level of single cells about 3.5 billion years back and considers the human to appear around 2.5 million. The latter date may be discussed but of importance is the enormous span of time taken by the development of basic intelligence, enormous compared to that of the primate-ape-human. This fact is also observed by Tattersall (2006).
[6] Square brackets because the content is not strictly relevant but however interesting enough to mention.

(ibid. 116). However keeping in mind that the basic pattern of an agent interacting in his environment is the always present and the necessary basis for the mentioned symbol based instances (ibid. 137). Functionality is central. Therefore attention should be focussed on sensory observation and motor action (ibid. 137), phenomena within the reach of plain observation. Representation provoked by symbols is subordinate[7]. The suggestion of a mental picture like representation (ibid. 88-9) [8] is redundant (ibid. 114-5)[9]. The way things really happen is altogether different from the way biological systems are understood on the basis of how computers are thought to function (ibid. 133-4).[10]

Brooks suggests a basic development spread over a large window of time characterizing animal intelligence useful in negotiating the environment. It is not only basic in a primordial sense but also as substrate onto which intelligence fed by symbol based representation could come into being. So far for the core idea, of less importance is the addition that the actual computer metaphor is a history based semantic content providing an understanding of how things might work. Serving that end does not necessarily result in a accurate depiction of how biological systems really work.

I.3. Common basis

The basic evolution spread over an enormous span of time offers a good starting point. It is not only basic as a function, it is also initial as being first in time and primordial as quality of importance. And, not in the least Brooks refers to it as part of the animal system grounded in the physical dimension. This reminds of Darwin who in "The Descent of Man" notes "As man possesses the same senses with the lower animals, his fundamental intuitions must be the same. (…) My object in this chapter is solely to show that there is no fundamental difference between man and the higher mammals in their

[7] This relation will be discussed further.

[8] This is different to representations provoked by the use of symbols mentioned earlier. I will come back on this.

[9] The idea of a picture like representation has a basis in history of – in this case Western - thinking.

[10] "There was never any selection pressure for internal 'picture shows' – only for what vision could do in the service of external action." (Goodale & Milner, 2004: 40)

mental faculties." 1871/2009: 35/6) Richard Leaky referred to man as the fifth ape, with a suppressed smile adding that the relationship between man and ape is closer than that between a horse and an ass.[11] This agreement cannot be valued enough. Not the jest about horse and ass but that the species that eventually would evolve into the modern man at one time must have possessed the same cognitive capabilities as other closely akin species. Reporting on the finding of a fossilized skeleton of Homo Erectus in Kenya, Walker and Shipman note "…and yet the (Turkana-) boy could not talk and he could not think as we do. For all of his human physique and physiology, the boy was still an animal – a clever one, a large one, a successful one – but an animal nonetheless." (1997: 235). A decade later, describing an even earlier hominin than the Turkana boy, Wynn and Coolidge averred that "These early hominines shared a cognitive phenotype that was indistinguishable in its major components from that of gorillas, chimpanzees and bonobos. These bipedal apes occupied the same cognitive grade as their knuckle-walking cousins." (2009: 106)

There are different ways to understand Darwin's assertion. It is commonly taken from a biological point of view, stressing anatomical, physiological even behavioural agreements. In so far the focus is on the cognitive faculties a particular point of view is taken. Animals are tested from an anthropomorphic perspective: do they succeed in solving problems typical for a human context like in obtaining food hidden in puzzle like contraptions or finding their way in mazes.
The most striking conclusion of Darwin's quote seems to be overlooked. There must have been a time when the cognitive capabilities of what in the end would become the human and the animal species most akin were the same or in Brooks' wording, the basic intelligence was the same. This way of being in the world proved at the same time to be the necessary and the sufficient condition to cope with the burdens of the (same)

[11] A three-part television documentary "The Genius of Charles Darwin" dating from 2008 presented by Richard Dawkins. I am not engaging into the discussion about the human being an ape as suggested by Leaky or chimpanzees and humans have a common ancestor. Of importance is the fact that once both must have been subject to the same circumstances and answered these with the same type of appreciations and heuristics.

environment[12]. The scope of this cannot be overestimated[13]. Because as the substrate it not only provides the necessary condition, it also poses the constraints of what eventually will be possible in the future. It dictates the system or the logic of abilities - the skills is a better denotation - to come. Human cognition is not appearing from thin air, it is grounded in the physical environment as Brooks too points out.

Different questions come to mind.
Brooks' basic intelligence might be taken synonymous with cognition. The question then is: what does that concept stand for beyond a self evident understanding?
Brooks further suggests that basic intelligence functions without representations. The question is similar: what does the concept of representation stands for, where does it come from - in particular the idea of having picture-like representations?
Both questions have to be understood against a particular background. Cognition is not to be measured by a system of apparent logical rules such as these of coherent transitions and criteria for truth determination for instance, but rises up from the way the environment is experienced in a meaningful way (Lyon, 2005, van Duijn et al. 2006). This perspective relates to the importance of the phenomenal dimension which will be discussed further.

I.4. Cognition

The veil of a self evident understanding suggesting a lot but explaining little has to be lifted. For that purpose clarification of the historical dimension will play an important role. Reduction to basic functions will further allow situating cognition into a larger picture compatible with Brooks' approach.

[12] Brooks' basic intelligence agrees with "World 1" in the Forgotten Transition, likewise "world 2 refers to the human way of negotiating the environment.
[13] Meaning that cognition, whatever the species, cannot be else than embodied, bound and closed. This does not impede room for creative, imaginative manoeuvres.

I.4.1. History

The understanding of any concept is enrobed in history based discourses. Cognition is no exception. The subject is fascinating but also comprehensive. Giant steps will provide relevant highlights.

The first period is situated prior to 500 BCE[14]. In so far cognition is understood as mirroring[15] the world, the style of understanding and particular in this context expressing by the use of language comes down to what could be called an articulation of existence. Language is an act of existence, is an instantiation of it in the same sense of eating and walking. Conditions and circumstances about objects, animals and events are expressed better still *articulated*. Judgements are not thoughtful reflections, pondering why. Questions into the whereabouts are asked, statements provided, full stop. This type of articulation was known as the expression of the attributes that are (present) or "that what is" (hoti esti)[16]. Of importance is that the basic tenet was that of dynamism, life and all appearing was a constant perturbation.

Around the period mentioned something changed. An instance of invariability appeared on the scene. Different scholars point to different causes. It was a period of prosperity allowing the learned to discuss. Geoffry Lloyd stresses the need for an indubitable and fixed instance which could serve as a criterion to judge different interpretations. Graham Harmann on the other hand saw in the development of agriculture bringing forth surplus which could be stocked, hence introduced a new quality of stability very different from the day to day life characterizing hunter-gatherer communities. The way of thinking changed profoundly.[17] The introduction of this

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[14] This date figures as a symbolic landmark with a different period before and after.

[15] "Mirroring" understood as representing is actually problematic. This will be discussed later.

[16] Aristotle, Philoponus comment on Posterior Analytics discussed by Jean De Groot, 1991. Also K. Verelst, 2005-6. De ontology van den paradox.

[17] G.E.R. Lloyd is a historian at Darwin College Cambridge, specialised in ancient science. Morton in the publication with the title Dark Ecology (2016) offers a different approach which leads however to more or less the same end state. Anyway that something fundamentally changed also got mentioned in the writings of Nietzsche in origin a philologist and of Heidegger showing a particular interest in that very period. His explanations more than often referred to Greek sources and meanings of terms. The problematization of the nature of "that what is (invariable)" is also discussed by

invariable quality provoked a new question viz into the nature of "that what is" or "what is that – that what is?" (ti esti ti).
In turn an afflux of suggestions got offered such as earth, water, fire, air, atoms and even an all encompassing 'apeiron'. These different flavours are not of importance, the fact that the nature of something becomes questioned is. The nature of language changed. In stead of being an act of expression a condition it became an instrument able to poke into existence by asking into the nature of that what is. This is the first shift which from then on will characterize Western thinking.

This depiction is all too simple as there is not only the need to understand the world but also an ethical dimension about living a good life. From that point of view there is yet another thread, that of revelations. But of relevance here is the question into the nature of a thing. It will impress a defining mark on Western culture and Plato will give it a particular twist[18].
The allegory of the cave is well known[19]. People are living in a cave only able to perceive shadows projected on the rear wall, thus devoid of a direct knowledge of the world,. The souls however once resided in heavenly circumstances in contact with true knowledge. Using the right methods man is able to get in touch with ultimate truth.[20] By this knowledge is not only the result of a particular question – into the nature of things, it also becomes glorified.[21]. Dewey already in 1958 observed an obsession with knowledge[22], a point of view shared by Rorty in "The mirror of Nature" (1979)[23].

Philippe Descola, French anthropologist "Par-delà nature et culture" 2005, ed. Gallimard.

[18] According to Whitehead Western philosophy can be understood as a footnote to Plato. (1979: 39)

[19] Republic, 514a-520a, also known as the doctrine of recollection. (in translation, 2000)

[20] "For I am building (…) a true model of the World such as it is in fact (…) Francis Bacon, 1605, Novum Organum

[21] This idea is present in publications by Karl Löwith. Also Hadot referring to Pascal who points to the religious origin in positivism in the theory of knowledge (2006: x). van den Bouwhuijsen elaborates on the relation between Christian culture and science of nature (2010, Kampen: Klement).

[22] Art as experience, p.21.

[23] Both actually refer to the problem of knowledge but considering it a problem precisely expresses the esteemed central value of knowledge itself.

In summary the different steps setting out the scenario characterizing Western culture[24]
- starts with the condition of language as an natural way of acting out
- followed by introduction of the thing that is
- provoking the question into the nature or the essence of the thing that is
- provoking the idea of a truthful answer
- a condition within reach of man in so far he uses the appropriate method
- the result going with a glorification
- the radiation of that glorification onto found and yet to find scientific truths

It is only against that background that the actual meaning of cognition can be understood. Those convictions radiate self-evidently through many of the actual statements in that field of research.

I.4.2. Cognition, a caricature

As said, ideas about this subject are neither neutral nor objective. The focus on the character or nature of "that what is" follows from historic coincidences while Plato's approach provides an aureole of glory.

This is the right moment to draw a somewhat exaggerated sketch of the contemporary appreciation of cognition.[25]

Browsing the literature shows that human characteristics are commonly taken as hallmarks of cognition. Human cognition is not a particular instance of a general occurring ability but the other way around, it seems to be the yardstick to evaluate cognitive abilities of other organisms.

Neisser's classic definition (1967) referring to a computer like processing of sensory input by the brain rendering the appropriate motor output seems silently omnipresent. The agreement of brain and computer is obvious. Computers work driven by tiny

[24] This is a rough and very simplistic line. Highly interesting facts – not necessary for this explanation – have been left out such as the tension between revelation and "scientific" development (Saint-Augustin versus Thomas of Acquino), the redefinition of the object through the practice applied by Galileï, the influence of the latter on Descartes (Reed, 1987), the shift of attention from the object of scrutiny in the direction of the abilities of the knowing subject himself… to mention some.

[25] A summarizing overview composed by L. Barrett (2018) is used with permission.

electric pulses, a similar activity seems to be going on in neural networks. Moreover computers process information to get things done, as do brains. The workings of the brain have in the past been understood as the telephone switchboard followed by tuning in borrowed from tuning a radio station and now the computer as information processing contraption functions as the reigning metaphor. The invention made by Turing and the introduction of an information processing theory by Shannon and Weaver have been influential. So computationalism is based on metaphor.

The assumed central role of the brain also has a historical background. Martensen in "The Brain Takes Shape" (2004) elaborates on the shift in the 17th century from the heart as the centre in the direction of the brain. It might seem evident to consider the brain as the most important organ but it is difficult to deprive the heart from that very same importance. Both are essential. But this trivial observation is not really the point. It is not so much a matter of fact but of appreciation. Take hara-kiri, committing suicide by opening the abdomen. In Japanese culture this part is considered to be the centre of the human and the seat of the soul (Nitobe, 1905). In the Middle-Ages also the heart took that position. The work of Willis (1621-1675) as Martensen explains, redirected the focus in the direction of the neural tissue, ultimately to the brain. This is interesting not only because of the redirection but also because it is related to a change in the way something is becoming represented.[26]

The following illustration will clarify. Take a crucifix. In the Middle-Ages it did not represent but present the divine. It did not depict but rather stand for the real occurrence. To this day when the priest holds up the silver cross, he does not demonstrate a work of art but a presence[27]. In a similar sense knowledge was understood as the convergence of something in imagination and the world itself. It bore the character of some experience occurring (remember the crucifix). Willis[28] instead focussed on the likeness of knowledge. Sketches and diagrams introduced offered a depiction in a truthful way. The shift in the direction of a picture like representation

[26] Martensen offers a sober observation of historical facts. In the first chapter of "Soul machine, the invention of the modern mind" (2016) George Makari presents a lively description of Willis originally a "piss doctor" against the background of his time.

[27] The bible offers another striking example. It is not a compilation of parchment but an instance of God revealing himself.

[28] Of course in person but even more as an exponent of an upcoming change in mentality (think of Bacon, Locke Hume etc.)

starts to show. It is not coincidental that the meaning of "objective" in that period shifts from truth to nature – think of the presence mentioned – into the direction of mechanical objectivity. The latter refers to a picture acquired by mechanical means so that human subjectivity could not interfere and distort (Daston et al., 2007).
Rounding up, points of view such as computationalism, brain and electro-centrism, and the glorification of an ultimate truth have a historical background, forcing the meaning into a certain perspective.

I.4.3. Representations & Escher

An abundance of publications comments on the character and the role of representation. The aim here is to focus on a particularity already mentioned when referring to the shift from a condition of raw experience in the direction of an appreciation of likeness. This deserves an extra emphasis whereby the following analogy will help.
Escher is well known for drawings depicting situations defying the laws of nature. The "Waterfall" shows a building complex with different storeys. Water is streaming in a quite natural way apart of the fact that it oddly enough seems to flow upwards. The viewer will be puzzled by this counterintuitive phenomenon.
Taking a step backwards two aspects are to be discerned. In first instance a scene with a meaning at odds with common sense. In second instance a composition following the rules of expert drawing is shown[29].
This exposes a split between the technical operation called drawing which retains its character whatever the subject drawn, to be distinguished from the semantic payload of the drawing as product of the mentioned operation.[30] Both are intertwined, every act of drawing brings forth a particular drawing and, at the same time both dimensions can be considered apart. While the operation remains basically the same, the product of the operation is variable. The drawing of a landscape, a portrait or the cross-section of a

[29] He got inspired by the the Penrose triangle. The "Waterfall" is built up by two triangles laying on top of each other provoking a three floor model.
[30] Focussing on this split is necessary to clarify what is going on but it does not imply that in real world situations both would be isolated. Every operation has meaning and meaning plays a guiding role in operational behaviour. Alas, elaborating on this would lead to far astray.

building makes use of the same basic techniques while the subject drawn is very different.
Implementing this scheme onto the subject of representation there is a difference to be made between a picture like representation of the state of affairs occurring (the subject depicted) and the operations bringing forth the representation which might whether or not take the form of a picture. Whether or not referring for instance to Willis offering picture like representations while Brookes points out that most of the evolutionary time representations of this type did not occur.
So there is the technique to be discerned from the product of the operation which may or may not be picture like.[31]
What is the signification of this?
Anticipating on what has to come, this clarification wants to draw the attention to the suggestion that the evolutionary trajectory resulting in human abilities, occurs on the level of the operations and that the semantic payload is a product of the operations mentioned variable over time.
Straightforward, for understanding the human type of cognition, staring at and discussing the sense or nonsense of representations is misleading. The bottom line is that the real action is indeed occurring on the level of action itself.

Summarizing, the characteristics of the contemporary appreciation of cognition are as follows:
- human cognition is special (Plato)
- as the yardstick to evaluate cognitive powers of other animals it is anthropocentric
- it resides in the brain (brain centric[32])
- it works like a computer
- it processes information hopefully generating adequate motor responses
- the information can have the character of picture like representations

[31] When Brooks stresses the impact of nonrepresentational processes he rejects Cartesian representations which are picture like even when words are used, not operations (in this case leading making present again). Brooks explicitly states that presenting a photo to an AI system does not work .(1991: 143) An alternative substituting depiction will be offered later when referring to Edelman.
[32] Raymond Tallis considers this neuromania (2011); Dennis Noble offers an alternative called integrative biology (2006).

To make matters worse terms as mental and mind remain in use as apparently self evident natural kinds[33]. Barrett comments (under conditions like these) "Determining when or why an organism can be deemed cognitive is not clear-cut and tracing the evolutionary origins is accordingly more difficult." (Barret, 2018)

As a historical defined discourse one might start wondering what the importance of the concept of cognition is after all. The answer is twofold, at the same time yes and no.

I.4.4. A more useful approach

But first it should be explained how to understand cognition and representation in a way more suitable for the actual exposition.
Hebb's idea joined with Edelman's approach can help.
Donald Hebb (1949) suggested that recurring situations responded by recurring patterns of behaviour correlated with neural cell assemblies. Cells that fire together wire together as such providing ever more stable neural configurations.[34] Gerald Edelman (1989) defines representation as "making present again" by re-activating the Hebbian configurations provoking particular experiences.[35] This seems a quite basic process and it would not be too farfetched considering this as part of the basic development mentioned by Brookes. An all too superficial understanding takes that basic condition as phase in a past now long gone. But I suggest that this is still the actual way of proceeding. That at the level of the technique – remember Escher's drawing, to this day this is the way things are working out, that representations are, not depictions but

[33] "(…) we still lack a means of navigating between overly "mindless" accounts of behaviour versus "mindful" accounts that involve the use of mentalist terms, where the latter, as Penn (2011) points out, fail to identify any cognitive process at all, but simply fall back on folk psychological descriptors (in van Duijn, M. et al. 2006). Clarck in turn questions if "mind" is a scientific kind (1999).
[34] This formulation is too short-sighted but it touches the essence of what is relevant here in the slightest number of words.
[35] It will be clear that a reactivation like this can affect the visual cortex provoking a kind of visual experience. However similar this is not what is meant with the picture like representation as understood from the 17th century on.

conditions made present again. The idea of a depiction-like representation is a discourse rooting in a particular historical period.

Concerning cognition, the term is used quite lavishly while the content of it remains subject of controversy (Marc van Duijn et al. 2006). In need of some definition a description of how it might be understood against the background of interactive operations will suffice for the actual purpose. Therefore Neisser's approach that it is about sensory input processed in order to give rise to responding behaviour suffices as steppingstone. The part in which he attributes this activity uniquely to the workings of the brain has to be left out. The brain has indeed an important function but it is not the miraculous fountain from which all initiatives sprout. In the same line of thinking the organism is not understood as an isolated unit provided with a control and decision centre[36]. First of all any organism is embodied, a condition opening abilities at the same time constraints (Chemero, 2009; Rowlands, 2010; Gallagher, 2011; Shapiro, 2011; Lakoff, 2012). Secondly the organism in general and consequently cognition in particular is situated (Clancey, 1997; Clarck & Chalmers, 1998; Wilson, 2002; Suchman, 2007; Wilson & Clarck, 2012) and distributed (Hutchins, 1995), in short cognition is extended (Rupert, 2009). From a biological and ecological point of view no organism can exist in isolation. As humans we might have the idea to stand apart from and in confrontation to the world, but this is an appreciation, a particular perspective[37]. As any other land dwelling animal the human could not exist without a supporting ground, or without air to breathe, without water to drink, food to eat. Despite what we think, we are intertwined with all what surrounds us. In sketching out an identity we may consider the skin as the border but as living experience we expand quite further. Merleau-Ponty (1945: 167) coined the striking depiction of a blind man with a stick. Where does the self begin, at the end of the fingertips or of the stick?
Following that line of thinking, cognition is not something isolated in the vault of the skull. What is seen cues knowledge and if this is about a recurrent event thus having a history, we enter the domain of enaction (Maturana 1980, 1987; Varela 1991; Di Paolo et al. 2011; Gallagher 2013).

[36] Contra brain-centrism, Noë, 2009.
[37] Not an arbitrary appreciation but one as part of the human condition.

This sketches the frame of reference. Further elaboration would take too far off from the actual theme.
Long story short, cognition comes down to the processing[38] of embodied input in order to bring forth responsive behaviour and this as a function of the meeting of the actual condition of the primary motives of the organism on the one hand and what is within reach in the Umwelt (perceivable environment) on the other. Representation is the reactivation of neural configurations built up by previous experiences.[39]

I.4.5. The importance of the phenomenon

This demystification of cognition provoked the question why cognition should be considered to be important after all. The answer goes both ways. Cognition is important but not the decisive factor.
Again Escher's picture will allow clarification.
The viewer is intrigued by the drawing in a direct manner. Some will maybe ponder on how this odd depiction is possible at all while the drawing technique itself is never questioned.
In a similar way a person is experiencing the world directly as a meaningful and self evident scene, as a phenomenon[40]. The underlying processes fall out of scope in the same sense as the technique of drawing in the case of Escher's picture.

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[38] This implies the use of implicit heuristics and procedures, native of acquired through experience.

[39] It is not to be overlooked that the understanding of the situation at hand is brought forth by acquired experiences from the past (ref. Beau Lotto, Donald Hoffman and also the enaction approach presented by Maturana and Varela; even interesting in that respect is the suggestion of a "Lebensform" made by the late Wittgenstein in "Philosophical Investigations").

[40] Kant stresses that man can only know the world as it appears to him. Also mentioned by Charles Peirce calling it the phaneron from the Greek phainein, that which appears (Atkins, 2018). See also Husserl pointing out that the first contact with the world lies in being conscious, as a phenomenon appearing in consciousness. A similar point of view occurs already in Locke when arguing that reflection is the only source of knowledge (Essay concerning human understanding, II.I.4ff).

But is the phenomenal not raised by the processes which could be called cognitive, as such both terms in the end being synonymous? This assumption might be justified, the focus remains on the phenomenal dimension because the characteristics of it will prove useful in unveiling the supporting operations (Esher: drawing technique; here: operations serving negotiation, in particular manipulation). Moreover the experience is indeed coming first whatever the underlying cognitive influences from previous events. It is how the world is taken - the phenomenal character – which in the end will be decisive for the way an organism will react upon the fluctuations in the environment[41]. It is not said that the other factors would not be of importance. It only expresses *that in the end* the way the world is understood is decisive[42].

I.4.6. Concluding

What are the characteristics of the phenomenal scene, in particular the scene generated by the necessary basis of intelligence in distinction to the one generated by "true intelligence", as mentioned by Brooks (1999: 81)?

Accidentally and as it turns out quite fortunately, following the flow of cognitivism in the nineties I got engaged in the study of the cognitive dimension of consciousness. (Gilbert, 2004) One idea was that in order to gain insight in the specific character of human cognition a comparison with animal cognition, great apes in particular, could be helpful. A lot of research in that field was going on, especially efforts to learn language to apes. But as mentioned, research in robotics too offered fruitful insights. Hans Moravec (1988) an expert in that field, observed that typical human cognitive tasks were easier to imitate than the execution of low level processes, the basic intelligence level

[41] This is similar to the following: whatever the cause (genetic or other) of the (change in) phenotype, it is the latter which has to prove viability in real world circumstances.

[42] The apparent dual character of cognition versus phenomenon is a perspective opened by a particular human even Western-analytic way of understanding things. The model of a circular relation would be closer to what is happening. Embodiment opens a particular "view" on the environment (the phenomenal dimension) in turn guiding motor response of which the reach is dictated by the embodiment on the one hand and on the other exerting a selective pressure on what variations occurring in the body are favourable for the conditions at hand. As such cognition and phenomenon should be considered to be dimensions of one overall movement rather than two instances divorced from one another.

Brooks mentioned[43]. And the biologist Sarah Shettleworth (2010) added an interesting observation. Animals proved to be capable of solving far more intricate problems than might be expected from the Cartesian view on animals as automatons.[44] So that basic level cognition was not so short sighted as commonly is suggested.
The research resulted among other things in the start of an inventory of specific animal and human traits with that preparing the field for finding at least some hint on the difference making the difference.
Commonly traits such as these are without questioning taken to be cognitive in kind – mainly aimed at problem solving, but on closer inspection they offer a peek into the way the "world" is taken in a meaningful way, the phenomenal dimension mentioned.

II. Comparing the different phenomenal scenes

II.1. Preliminary remarks

The first is about the impossibility to "see" the environment through the eyes of another creature. We are however not completely helpless. Abundant literature from the field of ethology and cognitivism provides clues, for instance the efforts to learn great apes language. Findings from Gestalt psychology exploring perception at the most basic level relate to the basic level Brooks refers to. Also efforts in robotics exposing the character of basic intelligence in contrast to the different models imposed by computationalism prove supporting. The list which will be offered, roots in reports on experiments and long term practices.
Secondly, the research into this particular subject has been continued. So far forty two characteristics have been listed but not all are needed to make the point.

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[43] Similarly Gigerenzer refers to simple heuristics making us smart (2000), on heuristics in general (2011)
[44] Here too the publication of Makari mentioned earlier provides a historically lively staging.

Thirdly, Western culture frames the understanding of the world in a cause-effect scheme preferably in mechanist wordings. Take the workings of the brain for instance described in terms of electro-chemical processes initiating behaviour. The approach here will stress the phenomenal pole: how is an organism – man or animal akin – "seeing" or appreciating its environment. This choice is justified by the fact that it is precisely this which in a feedback loop will influence the cognitive side in turn action to be taken.
Finally, what will be referred to as world one and two runs more or less parallel with Brooks' difference between basic and true intelligence. I do not endorse this labelling whole heartedly but it points in the same direction and he attributes it the status of being basic plus it is the substrate for further development thereby agreeing with Darwin's idea of continuity.

II.2. The comparison – descriptive form

In the basic condition or world one there is not the slightest form of consideration about a world "out there" discernable from the organism itself. Experience merges with what an independent observer from the outside would call the fluctuations of the environment. In that sense experience takes the centre of an all encompassing entity.[45] A similar situation is experienced by a child in the earliest stage of life. Existence encompasses what falls into reach - suckling mouth and feeding breast being one without any form of separation.[46] The merging also occurs at the level of the input channels. There is no separation between eye and ear, or hand and mouth but instead a single dynamic.[47] The octopus does not consider which arm to throw into the action; the

[45] Centric according to Helmuth Plessner, philosopher and sociologist (1975, chapter 7).
[46] Jean Piaget calls this condition "protoplasmic consciousness" (1930: 244); the "gemeinsamens Schicksal" common fate) mentioned by Max Wertheimer falls in the same atmosphere (1923: 301-350); see also Ostrovsky (2009) on movement as the binding factor.
[47] Synesthesia taken here as the very first condition probably shared amongst all animals, the division of analytical intervention into different perceptual channels being a particular human frame of reference. (Cytowic, 2002, 2009)

whole of the animal acts in concert.[48] The abilities of the body define the range of existence. If there are eyes, the visual capacity will determine the boundaries of what can be seen. That has an iconic character, one scene in which all the sensory qualities coagulate as in a tableau vivant. An event dynamic by nature is taking place, having absolutely nothing to do with the character of a narrative. Determined by the condition of the primary motives, fluctuations absorb all attention. Hunger drives the organism in the direction of food. The centre is taking the form of a figure as described in Gestalt psychology.[49] A stimulus perceived fires up consolidated experiences. It takes foreground, becomes salient while what is of less importance becomes blurred, merging into the background. The heuristics and motor programs to react on stimuli are implicit in kind.

It goes without saying that in the experience there is no dimension of time taking the form of an ordered sequence built out of projected elements of past and future. Existence is bound to what is actually at hand in very local way.[50] Behaviour is cued by the condition of the primary motives, and/or activated by the fluctuations occurring in the field of perception and the extent of the motor capabilities.[51] This however does not

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[48] What Rensink (2000) calls feature binding fits this idea. There is no collection separate items waiting to be assembled into one unit, but motivation hooks into an affordant Gestalt.

[49] After blindness figure-ground separation is achieved from the outset which would be an indication of the primacy of Gestalt organizing principles. (Gordon, 2004: 31). Also Yuri Ostrovsky et al.(2009).

[50] W.A. Roberts(2002), the stuck in time hypothesis. See also Bischof-Kohler hypothesis as in Tomas Suddendorf and Michael Corbalis (1997, 2010). Nicola Clayton et al. (2009) has argued that some primates and corvids seem to be able to recollect from the past and plan for the future. There might be a category mistake in play here. Is the recollection based on the use of non verbal heuristics as corvids and primates seem to posses really the same as the recollection based on the use of stimuli of 2nd order? There is absolute no doubt that squirrels are able to master a great number of hiding places for food. But to agree on a meeting to be held over five months on that particular day and hour and on that particular spot transcends the capacities of the mentioned implicit heuristics.

So, being bound to the actual as meant in this context refers to the abilities within the limits of the implicit heuristics (see Shettleworth).

[51] On the entanglement of perception and action, Noë (2004)

equal the organism to a dumb automaton. Moravec argued convincingly that these basic processes are the most difficult to imitate. Shettleworth in turn stressed the ingenuity of implicit heuristics.[52]/[53]

A depiction similar in style about the human appreciation of the environment follows.

The second world, by Brooks characterized as true intelligence is dominantly narrative taking the form of a never ending stream of comments and interpretations.[54] Humans not only experience a visual imprint, it is instantaneous accompanied by a denomination "a tree" supplemented with specifications as "a pine tree or a beech, fully grown or not, leaves or not…".[55] All this occurs from a perspective of being "here", the tree perceived being "over there" as such introducing an appreciation of distance between the observing instance and the object experienced. It is even the case in referring to oneself, happening in a way not different from pondering and commenting the behaviour observed in others[56]. The stance of an independent observer is taken, resulting in the somewhat odd feeling of always observing what is happening from a distant view point.[57] The Gestalt dynamic present in the previous condition does not disappear

[52] Off topic but interesting, Paul Pettitt (2011: 22) argues that the emotional life of chimpanzees is richer than commonly thought of.
[53] Povinelli and Penn (2011: 69) show that claims of chimpanzees reasoning about the world in a human like way are unfounded. This contribution is recommendable.
[54] Not to be confused with Popper's distinction between first and second world (in The Tanner Lecture on Human Values; University of Michigan; April 7, 1978). The aim here is only to discriminate the initial one with the later form.
[55] The illustration presented here might look all to Western. But the form could as well be magical mystery. It would make no difference. Essential is that whatever the experience it immediately gets enrobed into a certain discourse.
[56] Allison Gopnik (1993) critisizes the suggestion of a privileged access as suggested by the first person perspective. In that position the methods used to describe and interpret situations are the same as these applied observing of and theorizing on the behaviour of others.
[57] "Cette distance nulle" as Jean-Paul Sartre points out, a feeling of distance not corresponding to a factual dimension (1943: 116) It only starts feeling odd once considering this as in the question "who is the I talking about me?" In normal circumstances this stance comes as natural.

completely. This is a fact in accord with what the geneticist François Jacob already in 1977 suggested: evolution is not an engineer conceptualising everything anew but rather a tinkerer using what is available. [58] However what occupies the foreground is no longer characterized by fuzzy borders flowing into a vague background, but instead it is a sharply demarcated figure discernable from similar type of items in the vicinity.[59] In this sense the world acquires the character of a set of clearly defined objects with a remarkable feature: they are all - in principle - prone to manipulation.[60] A vase perceived standing as an item in isolation can be moved to another place, as can a dog as if were an object rather than of a living organism. The same can be applied to people. They can be sent to other locations, ordered to perform actions as if it were objects without autonomy[61]. This is quite different from the tension experienced by animals trying to move each other in a fight over food. Words, physical in kind, can also be manipulated allowing composition of complex strings which by virtue of association carry payloads of information in turn prone for manipulation 'by proxy'. Furthermore this world shows a particular way of organisation. It is a multiple dimensional frame of reference in which objects can be positioned along measurable coordinates. It also has an arrow of time allowing the ordering events in the same sense as objects arranged according to a certain criterion. Moreover this already systematic organized structure can be enlarged with an imaginative dimension. In a the technical sense it makes no difference describing the position of some object which is manifestly present in front, as it is to refer to some event that has taken place in the past on a very different location.

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[58] And for that matter also Brooks in observing that the condition of basic intelligence provides the stepping stone into further development.

[59] Consider Holloway writing about "the imposition of an arbitrary form on the environment" (1969, reprint 1992). Macnabb mentioned in William R. Hardie (1946: 127) goes even further "…material things are logical constructs out of the sense experiences."

[60] Actually in reverse: the world becomes perceived as a set of separate units through or brought forth by the extension of the skill of manipulation.

[61] The presence of an article preceding the noun expresses this character. There is *the* vase but also *the* wedding which is dynamic in kind but can be planned, displaced in time that is, as if it was an object.

II.3. The comparison in list form

Presenting that information in another way will facilitate grasping the particular character of both conditions. Special attention however to the fact that world one refers to the condition the ancestor of the modern human shared with the species most akin as Darwin suggested.[62] And again, this is not so much about the content perceived but about the way the input is getting organised into a phenomenal scene. In short, the structure is of utmost importance in determining what will become meaningful.[63]

The listing

W1 the scene purely iconic, a dynamic tableau vivant[64] – W2 unavoidably accompanied by narration[65].
W1 movement as key criterion[66] – W2 static objects[67]

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[62] Sarich (Dolhinow and Sarich, 1971: 76) making use of molecular clocks dates the LCA not further back than eight million years, most likely even between six and four millions. More recently White et al. defends that the chimpanzee human last common ancestor (CHLCA) lived between ten to seven million years ago (2009: 75-86).
[63] Hypothetical illustration: if glasses are designed to emphasize straight lines then the scene perceived will be structured along straight lines whatever the input offered.
[64] Not restricted to the visual. Every form of input provides a depicting structure. Echo location of bats raises an image, as does chemical trails produced by ants, the infra sound of elephants, tactile input in snails and insects with antennas and further all the variations of visual input (bi-, tri or five colour vision, wider than 300° field of vision characteristic for animals of prey, stereoscopic vision by predators or tree dwelling organisms)
[65] Dennett in "The self as centre of narrative gravity" (1992) hints in that direction but what is suggested here refers to a perspective materialized in speech or whatever other means of expression, emerging from the act of mediated manipulation. It will later become clear what is meant.
[66] Ostrovsky points out that movement is the binding factor in perception (2009: 7), also Heft (2015: 254). The primacy of movement can be inferred from the fact that recognition of static features is not native but has to be learned (Hamlyn, 1979), an observation confirmed by Cathleen Moore, also by Mendes et al. (2008), and Gordon (2004). For

W1 exclusively primary motivated[68] – W2 able to take distance from the primary motives

W1 an ongoing event – W2 presents itself as a set of objects or objectified scenes

W1 figure taking foreground[69] – W2 a set of isolated units susceptible to manipulation of some kind

W1 synesthetic[70] – W2 input appreciated as channelled by different tracks

W1 global, holist, monist[71] – W2 divided in different separate parts[72]

W1 (ego)centric[73] – W2 decentralized, allocentric, eccentric[74]

W1 direct in time and space – W2 experience of distance

Cathleen Moore: interview with Joe Anuta
https://news.psu.edu/story/141360/2006/04/17/research/probing-question-if-blind-person-gained-sight-could-they-recognize

[67] Movement is translated in terms of objectifications following a mechanistic scheme of cause and effect.

[68] Malthus recognized two principles as basis for the tension between the food reserve and the size of the population: the need for food as basic condition for life and the persistent drive to procreate. Influenced by the reading of Malthus work, the very same ideas can be found in the last paragraphs of Darwin's "Origin of species". Observe that according to F.E. Goodson (2003) the tendency to homeostasis is a primordial drive and quite different from the urge to procreation which he considers to be a strategy in survival (next to an armoured body/exoskeleton). This is a remarkable point of view because in that case, procreation seems not to be teleological motivated.

[69] Best be described in concepts proper to Gestalt psychology as suggested y Wertheimer, Kofka, Rubin and many others. For a more contemporary approach: I.E. Gordon (2004) for instance.

[70] On synesthetics: R.E. Cytowic (2002, 2009); Robertson and Sagiv (2005); Ramachandran and Hubbard (2006, in van Hemmen and Sejnowski, eds.); Deroy and Spence (2013).

[71] Corresponds with "Gemeinsammens Schicksals" or common fate coined by Wertheimer (1923); for an approach going in the same direction also Iverson and Theelen(1999) and Gallaghar (in Radman, 2013: 209).

[72] From a different frame of reference this is related to "aboutness" and the declarative structure of a verbal construct (in public or in thought).

[73] Egocentric: Piaget (1930:237-305); Hurford (2014:51); Rendall, Vokey and Notman (Penn et al.2008: 144); Cheney and Seyfarth (2005).

[74] On eccentric: Plessner (1928); Ratners (1991); Wynn and Coolidge (2009: 166/172); Silverman et al. (2000)

W1 context bound[75] – W2 disconnection as unavoidable condition

W1 bound by the particularity of the situation – W2 able to abstract and generalize

W1 confined to the actual Umwelt[76] – W2 displacement in space and time[77]

W1 direct action/response – W2 pondering (the problem), considering (alternatives)[78]

W1 direct action (if means then incorporated) – W2 mediated[79]

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[75] Bishof-Köhler hypothesis suggesting that animals are bound to actual motivational conditions and are not able to consider future actions (meaning they cannot ponder about followed by planning future actions). In that respect also Povinelli (1993, 2000, 2004). Nashida and Hiraiwai provided observational clues on the (short) window of time apes making tools (1982). They also note that only humans are able to represent things that are not present or even do not exist, conversely apes are bound to the actual context (2011). Suddendorf and Grant point out that the ability to anticipate only develops gradually in children (2005). Parker and Mibrath argue that anticipatory planning cannot be realized without language (in Gibson and Ingold, 1993: 314). If disconnection of the actual context is possible or not is discussed at length by Roberts (in Wasserman and Zentall, 1996). All this is related to what is called "cognitive closure" (Chomsky, 1975; Fodor, 1983; Mcginn, 1991).

[76] Confinement is actually not quite correct as it implies the idea of transcending that condition while in W1 that idea is absolutely out of the question. There is no awareness of being confined, it is the only and natural condition.

[77] On displacement and self initiated imagination: Alexus Meinong, 1905; Roderick Chisholm, 1960: chapter 4; more recent: Jacquette on Meinong (2015); further Hockett's design features in which displacement falls into the human abilities. (Charles Hockett and Stuart Altmann, 1968). Humans represent things that cannot be observed or even not exist (…) this is a universal feature of human cognition (Povinelli and Penn, 2011: 76)

[78] Problem and alternative are of secondary importance and therefore put into brackets. The emphasis is on the condition to be able, even forced to ponder and being confronted with alternatives. It sometimes is suggested that a first person expression is direct in character and as such escaping this scheme. This however overlooks the position of the actor-speaker bringing forth the expression the latter being put in the position of the object in front of the speaker. In that sense there is always "aboutness" and thus declaration. For the importance of aboutness as an exclusive characteristic, Rosenthal (1990) in his discussion of higher order thoughts provides an excellent insight.

[79] Approaching the world is framed in a scheme of mediated manipulation. Tools are omnipresent, informing the other is based on the use of words as physical means.

W1 direct contact – W2 behavioural detours such as substitution and sublimation possible.

So far for a sketchy depiction[80] hopefully helping to shed light on what could function as stepping stone from the basic condition to the human mode. The burning question is what in all this could be standing out?[81]
At first glance the following difference attracts attention. It all seems to start by being confined by and bound to the Umwelt only bringing forth direct (re)action. Experience and world collapse into one in this condition.[82] In the second world detachment from out a seemingly free floating position outside the scene where it all takes place seems to be the rule. This happens in a sphere of distance, a con-front-ation, not collapsing with but in front of, allowing judgment and comment. There is more. Spatial displacement and time travel in imagination are part of the default condition opening an apparent endless horizon of alternatives. Considering that it all started from the basic condition, what a difference indeed.

II.4. A first glimpse

But despite this remarkable difference, the question remains: what could be the underlying deus ex machina, the catalyzing factor making all this possible? Richard Leaky offers a useful hint. Telling Richard Dawkins that man was the fifth ape he did not stop just there, he added "(…) *doing things differently*".
The stress lies on "doing" and on "differently".
What are humans doing differently?

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[80] Until now forty two differences have been inventoried. A publication on this subject will follow in due time.
[81] This question is akin to the subject of what makes the human unique (Chase, 2006; Suddendorf, 2013; Hill et al., 2009; Henshilwood, 2003; Tomasello and Rakoczy, 2003; Wills, 1993; Davidson and Mcgrew, 2005 to name some). But this is a somewhat different track.
[82] The idea of closedness comes to mind, but this is the wrong term as it automatically calls for openness as counterpart. Instead there is neither closedness nor openness, it is the only condition transcending this duality, it comes down to naive realism in its most extreme form.

Remember Escher's drawing. Seduced by the bizarre effect one is focussed by the search for meaning blinding all possibilities beyond that horizon. Something similar occurs here too. "What…" we ask while at that very moment the answer stares us in the face. The difference is getting exposed by the actual verbal expression brought forth by the technique to produce something like a linguistic chunk which is declarative in nature. But the linguistic skill as prime example is too complicated for an introduction. The practice bringing forth displacement in the experience discussed earlier is simpler. How spectacular the effect might be it cannot be achieved without the occurrence of a *discrete unit* taking the function of a second order stimulus[83].

A "discrete unit" is the key term. It probably might be the catalyst looked for. In order to provoke the revival of an experience there is some discernable entity needed which in absence of the original situation can take over the stimulating function.

The core characteristics of the first world, being bound to the situation, stimuli taking the form of dynamic Gestalt figures and being engaged directly in action, are not facilitating factors to promote something like a clear delineated unit in isolation. There must have been a change of some kind. Questions is, are there any signs for a unit as mentioned?

III. Stone tools

> "Let's not forgot that these tools (which are not only important in their own right, but also in the development of their concept, their technology, their diversity, their relations etc.) are almost the only witnesses of the evolution of the mind of man from prehistory and of his intellectual, artistic and spiritual aspects."
> Yves Coppens (2011)[84]

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[83] Vygotsky, Lev. (1978), also stimulus equivalence in Thomas Dickins (2001: 221), even "hypomnèsis" in Plato's Phaedrus.

[84] Mais n'oublions pas que ces outils, (qui sont certes importants en eux-mêmes, le sont aussi dans le développement de leur conception, de leur technologie, de leur diversité, de leurs associations, etc., car ils) sont les seuls témoins ou presque de l'évolution de l'esprit de l'homme préhistorique et de ses facettes intellectuelle, artistique et spirituelle.

The suggestion formulated in the previous paragraph may be speculative in the pejorative sense, noncommittal, in the end not even worth thinking further about were it not for the fact that there is tangible material out there sustaining this line of thinking.
Findings from the region of Lomekwi going back to 3.3 million years ago are followed by the more familiar Oldowan specimens dating from around 2.4 million years BCE. The sceptical reader cannot ignore the Acheul biface hand axe dated back to 1.6 million showing a particular teardrop shape, undeniably a sign of corrective tailoring (Davidson, 2002). According to the anthropologist Ralph Holloway finds like these testify of an "imposition of an arbitrary form on the environment" (1992: 47). He does not mention a Gestalt but 'a form' most importantly of 'an arbitrary nature'. The meaning of the latter cannot be appreciated enough because he refers to completely new quality –arbitrary - absent in the condition labelled as world one being the home of basic intelligence. [85]
A word of caution is called for. This suggestion does not self evidently imply that a form was present in the mind of the hominid, conceptualizing it out of the blue, prior to the realisation of the artefact. This would be an all too hastily made teleological assumption[86].

But what exactly do the findings expose and what may be deduced from this?

(Coppens, 2011: 126) For an excellent discussion on the introduction of stone tools: Schick and Toth, 1993.

[85] It would lead too far off going into the discussion that (some) other species also make use of tools. There is no doubt about that. But there is no doubt neither that there exists only one species making tools of extreme complexity, some to be used in different situations and so multi functional and multipurpose, the pattern of mediated – tool using – action pervasive present in all aspects of life. Another contribution with as title "On the uniqueness of man" discusses this in depth (reference to the bundle "ON").

[86] …apart of the fact that the concept of a mind so widely used in a seemingly unproblematic way is actually quite problematic.
Further for considerations the form being present whether or not: Hauser et. al., 2007, in particular the scheme on page 272.

As mentioned it is impossible to overlook that something like an Acheul handaxe has been tailored[87]. Moreover examples found in abundance in different places allow the conclusion that this very form at one time became standardized (Harris et al. 1989).
The model could not have been brought forth without some stepping back in a metaphorical as well as in a literally sense. The implement had to be held at a distance to allow inspection. A symbiotic condition would not have allowed judging the interventions done so far in relation to the expected efficacy. The Latin term "objectum" refers to a composition of "what is held in front or thrown in the way of" by this fitting what is mentioned. Therefore the implement could rightfully be called an object. It did no longer take foreground as a Gestalt figure with fuzzy borders. In the eye of the beholder it became ever more delineated and something standing salient in isolation to all what is not relevant. In that sense it provides a tangible testimony of a change forcing the conclusion that a reconfiguration must have been taking place. [88]
In origin this is most probably still about a creature belonging to world one but something started to change the way it negotiated at the same time appreciated the environment.
It looks like that the Gestalt figure characteristic for world one has become redefined into a form functional in relation to certain circumstances. The temptation to speculate on what might have forced this into existence is strong. But the purpose here is to focus on the characteristics of what is observable - allowing inferences, not to speculate on possible causes.

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[87] This is a simplification because the Acheul already was a mark of development in stone tool technology. In the earlier types such as Lomekwi and Oldowan, the material as it was ready at hand – a flint nodule with a sharp rim - defined the useful form. For the Acheul type the sequence was the other way around. The form desired got imposed on the material. But the aim here is to emphasize that in origin cognition *followed* from the meeting of external pressure and embodied abilities rendering a (new) type of practice. This is the way natural selection works. Only later cognition started to influence practice in a feedback loop.

[88] The particular form of the stone tools used by the human could also be interpreted as the observable in a hidden Markov system testifying of a particular state on the perceptive cognitive level. Question then would be what the condition on that level would refer to? For an explanation: "From figure to object, elements for a constructivist approach", J. Gilbert, 2020. ResearchGate; DOI: 10.13140/RG.2.2.12719.28321

Focussing on the other pole none of the characteristics listed under world two can be thought of without the assumption of some *thing* as a pivotal element, even as a necessary condition, some *thing* well delineated prone for manipulation instead of a dynamic figure absorbing all attention.
How would it for instance be possible to compose narratives without the presence of clearly delineated physical elements such as symbols whatever the material, air allowing speech or a stylus to put down scripture? This is also the case for any form of formal expression like mathematics. These discernable elements also allow displacement of imaginative nature. Further, how could it be possible to choose from alternatives if clearly discernable placeholders for respective semantic content would not exist?
Also striking, elements such as tools, sounds, signs always seem to exist in an overarching scheme depicting mediated manipulation. Take the following randomly chosen quote "The business of managing life consists of managing a body…" (Damasio, 2010:74). Of course everyone will understand that life for instance is not an object. But observe that it is called "the" life as if it were some *thing* which can be handled. And it becomes handled indeed. It becomes object of discussion, of evaluation, of planning.
Once familiar with this distinction, one will be overwhelmed by the number of objectifications present in linguistic expressions. But these are not just so expressions. They are the instruments of thinking.

Rounding up

The human proves able to accomplish abilities listed under W2 while he started from the same basic conditions characterizing W1. The conclusion is obvious. There must have been a transition taken place in which tool-making and objectification occurred in conjunction. [89]

[89] Not surprisingly Taylor and Gray (2014) conclude that they have little idea of the effect that tool crafting had on the evolution of cognition. Their evaluation takes the concept of object for granted and as such the default level. The major transition lies in the past devoid of any form of attention.

IV Conclusion

Compared to the most closely related animals, the human radically changed his way of negotiating the challenges imposed by the environment. This subject has been approached from different angles.

To start, Brooks inspired by robotics opens a perspective on the character of cognition different to the mainstream appreciation. The distinction between basic and true intelligence parallels with the condition coined world one versus world two in Gilbert (2018). He argues that the basic intelligence is not only the hard part but also provides the steppingstone onto the typical human form.

Secondly the way an organism perceives the environment, the phenomenal dimension, is considered as the decisive determinant for the negotiation of the environment. That dimension however does not stand in isolation but occurs entangled with cognition.

Thirdly, it is possible to list phenomenal characteristics experienced by animals most akin and these by the human. Comparing both offers some indication of the difference making the difference. It exposes a stable configuration of input always present in the human perception. In hindsight this proves to be an essential ingredient in manipulating, broader in negotiating the world the way the human typically does. This finds confirmation in the observable difference in tools used by humans and by some apes species. The human version proves to be heavily tailored and standardized. That required a focussing of hand and eye on the implement tailored as such expressing a stance of taking distance to what is at hand in front of (con-fronting) the actor. This is not some detail but an all encompassing new way of approaching the environment.

In that context an object can be described as a particular (re-)configuration of input which can take a subtle form like light waves or more coarse grained such as clay particles, into a stable and well isolated character. Subtle or coarse does actually not matter. Of importance is the fact that input became perceived as, that is organized into something prone to manipulation[90].

[90] In this contribution no attention has been given to the form and function of the hand. For an elaboration on that factor of major importance: Marzke (1992); Tocheri (2007, 2008); Radman (ed., 2013); Almécija and Sherwood (2017).

This occurred at first strict literally but later also in a metaphorical sense. It transformed the niche from a dynamic tableau vivant into a set of manipulable objects, in a next step into a workspace in imagination.[91]

This requires a few notes.
The transition apparently escaped the general attention as such deserving the label "*the forgotten transition"*.
Secondly it draws the attention on mediated manipulation as an omnipresent and intrusive way of negotiating the environment, not simply a particular way of engaging into action but a general way of being in the world. That perspective has transformed the world as a phenomenon into a set of manipulable entities[92].
However strongly connected to the previous remark the following deserves particular attention.
Objectification should not to be seen as a feature in isolation, as something which can be considered to exist in itself. It is embedded in mediated manipulation. It is part of an overall scheme of negotiating the environment. Objectification cannot be thought of in absence of mediated manipulation while conversely mediated manipulation necessarily brings forth objectification.[93]

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[91] On niche construction: Laland et al.(2000.)

[92] The strong intertwinement of actor and Umwelt finds also expression in the material engagement theory (MET) formulated by Malafouris (2004, 2013) in turn inspired by ideas suggested earlier by Colin Renfrew (2001). In my opinion this theory is more about a methodological perspective, while the actual contribution tries to identify a catalyzing factor, on the one hand on the basis of inferences but on the other finding confirmation in tangible tools. On pragmatics as underlying MET: Iliopoulis (2019)

[93] One rather simplistic analogy might go like this. Take a cookery book. In itself it does not have meaning at all. But seen as a subpart embedded in a larger set of actions the meaning of it becomes self-evident. The similarity is remarkable. A cookery book can only brought forth by and after a long history of particular type of actions. Moreover it is the only context in which it is meaningful. In the same sense, an object as concept took form through and after a long history of a particular type of action (mediated manipulation). As that particular concept it only acquires meaning when considered in that particular context. Of course the scale is different but the dynamic is the same. For an animal immersed into an environment coined as world one, a conception such as "object" would be completely alien. If that would not be the case why haven't animals

The fourth remark is about continuity as suggested by Darwin. Brookes differentiates between basic and true intelligence in a sense also suggesting continuity. He does so by mentioning that problem solving behaviour, language, expert knowledge and reason, all are pretty simple *once* the essence of being and reacting covered by basic intelligence is available. That must in first instance be present. The approach in this contribution follows a similar path. The stable configuration of input, the object, is not considered to be something completely anew out of the blue. Its formation comes down to a reorganization of an already existing Gestalt figure-configuration. This idea is supported by the fact that the rules of both continue in force. Like for all other animals movement remains the primary cue attracting the attention. But unlike other animals the figure is in a complete new order taking the form of a stable configuration ready at hand inviting manipulation of some sort.[94]

The following remark is actually a reference to Escher's bizarre drawing. It is important because it shows a pattern which can be extrapolated.

The focus was on the difference between the technique of drawing on the one hand and the semantic payload – the content of the drawing, on the other. Particularly important is that the act of drawing opens a wide variety of what can be drawn but this technique at the same time determines what a drawing in its possibilities but also in its restrictions can do. One can draw an animal or a landscape but not drink it neither use it as a means of transportation. This might seem all too trivial, ridiculous even but it actually is not. Assume for a minute that the act of thinking always bears the character of a 'thinking about' requiring an object to be thought about, further that an object according to this contribution came into being by an act of mediated manipulation. This would imply that this mediated manipulation as a basic scheme opens a range of possibilities but at the same time imposes its inherent limitations. This has implications on the range of what is that thinking about. If this conclusion might be correct then it undermines the myth of a type of free thinking with an apparently endless open horizon. This is a subject worth further elaboration alas transcending the scope of this contribution.

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brought forth complex multifunctional instruments penetrating into an imaginative dimension which is not exceptional at all for the human?

[94] There is a dynamic tension between poles in play. In life-threatening situations the Gestalt-mode takes over in an unrelenting way. As soon as the tension takes off, reasoning making use of objectified units starts to guide behaviour again.

A sixth remark is about a critical mind confronting me with a brick at the same time asking "is this not an object then?"[95]

Of course it is. But observe the moment of punctuation: a brick is not a natural kind existing a-priori of any perception. It is the materialisation of a certain pattern of action bringing forth clearly delineated forms existing in isolation one from another.[96] A reaction could be about a certain crow handling – metaphorically in the case of a mouth of a bird – a clearly delineated stick. Agreed but crows do not keep tens of sticks, let alone thousands and they use one type of implement and do not have access to a quasi endless variation of tools applicable in a multitude of functions. There occurs a difference in degree to such an extent that it rightfully may be considered a difference in quality.

Seventhly the idea of an object being a configuration of some sort is not completely new. Whitehead for instance considered (1929/1978) it a set of relations and Latour (1996) as an actor defined by its relations.

New in this contribution is that an object acquired form in a genetic[97] process and it is seen as a linchpin into cultural hominisation, moreover as the catalyst accelerating the development of new typical human skills.

The last but not the least remark is about a difference in the general appreciation of knowledge.

Inspired by ideas once introduced by Plato and more recently Descartes' particular view, the mainstream remains pursuing an ultimate truth preferably taking the form of a realistic depiction. The present contribution prefers principles from biology and evolution as the bottom line. Organisms are above all negotiating the dynamic

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[95] This opens the pitfall of the scholastic discussion on nominalism versus realism. This is again a path which would lead too far.

[96] This depiction satisfies the actual need but the order is somewhat different: 1) a particular motor approach reorganizes the input wit time into a stable pattern which 2) from then on guides perception in a particular direction. The latter is actually the position suggested by Holloway. In his view it all took a teleological tendency: things *had* to come into being. By this he neglects the original or earliest forms of practice bringing into being – as a consequence and not because they had to.

[97] Phylo- as well as in ontogenetic perspective, the former refers to the stone tools, the latter to developmental psychology.

conditions of the environment in order to survive. [98] Knowledge is not the ultimate goal[99] but a dimension of that endeavour. As mentioned earlier, the line of thought starting with the Greeks over Galileï, Descartes and many others is a particular curriculum based in historical influences. That is not to say that it would be an empty fiction without valuable results. Scientific and technical achievements prove otherwise.

[98] For a similar approach: Vaihinger (1911: V & XXIII); Ortega Y Gasset (1949), Krebs & Dawkins (1984: 381-402); Brooks (1991, 1999); Trivers (2002); Giere (2006).
[99] It might however be chosen as such.

Synopsis

1. There is a condition of basic intelligence (Brooks), minimal cognition (Keijzer, van Duijn & Lyon), world I (Gilbert) present in all species with the closer the kinship the similar the kind and degree of cognition (Darwin), and there is a dimension only occurring in humans (Brooks: true intelligence; Gilbert, world II).

2. Insight in the history based interpretation of how cognition is to be understood is necessary allowing to bracket particular interpretations and to focus on operations.

3. "Esher" illustrates a distinction between the technique underlying some production and the effect on the observers of that production.

4. The effect mentioned provides understanding and as such guides future behaviour (including the technique to produce).

5. Listing and comparing characteristics of both condition (World I versus II) is not only informative but may unveil a feature exclusive to the human.

6. The previous comparison points in the direction of a unit fitting the busy hands in a context of mediated manipulation. It suggests a difference in perceptive cognitive organisation in that in the case of the human species the input is getting organized into a unit prone to manipulation. The input is becoming objectified.

7. This transition here formulated as a hypothesis is based on a long-term study of publications from diverse disciplines as ethology, robotics and artificial intelligence, psychology in general and developmental psychology in particular, physiology of seeing and experiences with blind people (re)gaining the faculty of sight etc. It seems to have escaped the general attention however it might be the catalyst in the developmental trajectory of acquiring typical human capabilities.

Further reading

This contribution offers but a glimpse on the core of the study executed by scrutinizing reports on first line or field/lab research and more general overseeing or overall theories. The first comprehensive conclusions became published in "*The Forgotten Transition"*, 2018. Antwerp, 's-Hertogenbosch and Portland: Gompel & Svacina. Later elaborations such as the bundle "The 5th Ape", the bundle "ON" (on the object, on meaning, on storytelling, on reality, on aboutness, on the human condition, on images in the head); a critique on The Material Engagement Theory; in unveiling the historical biases of Western thought as an necessary methodological approach; in Unveiling the mind etc. can be found on the internet (Researchgate, Academia, Internet Archive, a selection on www.johnfrgilbert.wordpress.com mainly in Dutch but also has contributions in English.

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III. Deconstructing history based concepts

Every exposition starts from out a particular perspective, feeding a particular way the world is getting understood. With this in the background two premises are in play.
First if every version or interpretation of the world is but a version, the very first question should focus on how a version as a version is brought into being, how it technically is realised, what are the conditions of possibility etc. In short, the level in question is that of technique and not on the justification of a particular semantic content.
Secondly from a very different corner, if survival is the very first objective then it is the form and the abilities following from the form of the organism acting in the open environment having to prove survival value. It is all about a matter of action and how to act, in short: technique.
That is the tenet taken.
However mainstream versions float on storylines in which concepts with a historical origin provide the beacons guiding thought.
It is evident that in order to understand the processes of action as clean as possible it is necessary to be aware of these historical wrappings.
In this third part an excerpt of a larger contribution will be offered sketching out how the concepts of mind and inner life came into being as parts of particular historical changing contexts.[100]
Boldly said, there is no such thing as an intransitive instance called mind nor an inner dimension or inner theatre. These are concepts based in history.
Being fictions does not allow inferring uselessness. In the period these have been brought into existence they fulfilled a necessary component in the understanding of the human being in the world. Actually they seem still to fulfil that goal, witness the abundant use of terms such as mind and mental, the inner life, conscience as the inner instrument of evaluation etc.
The following is an excerpt of a contribution in a separate volume "Unveiling the Mind". It is the second chapter with as title "Mind what are we talking about?" and as

[100] Another contribution, part I of "Thinking in and out of the box" could be taken as complement. The actual discussion will unveil some conditions giving rise to the idea of having a mind. Part I of the mentioned article describes the particular history based perspectives on the human constitution.

subtitle "A deconstruction of Suddendorf's "The Rise of Metamind" followed by a history based reconstruction of the concept of mind." It illustrates the demystification or deconstruction of the said concept.

A brief history of the concept of mind in Western culture

Asking the right question

No doubt this is about the mind but it has to be clear that the question is not "what is the mind?" It is about the concept. Where is the whole idea of having an instance like a mind coming from?

Asking that question implies a suggestion. It expresses doubt about the existence of a mind because otherwise the question would not focus on the concept but in the first and probably only instance on the mind itself. I cannot deny that I became convinced by the point of view that the whole idea is indeed a conceptualization of abilities and effects not yet or ill understood. But that is actually not the point here. The question is about the circumstances and events bringing a concept like this into existence.

The human condition

If there is indeed a condition which might be typical human then there must be another condition for which that is not the case. That is an easy one. Darwin offers the stepping stone in his famous tree like scheme of evolution demonstrating kinship amongst species. In most cases the focus is on commonalities on the level of anatomy, physiology and often of the genome. However often overlooked the same can be concluded for the abilities of perception and cognition. The branch of species out of which eventually the human would result must at one time have perceived and understood the environment in the same way of other species most akin. It will be argued that the point of engagement determining how an organism will act in certain circumstances is, apart from the bodily abilities, determined by the way the environment is getting perceived, in short the phenomenal scene. The question is how could we - only able to understand in the way modern humans do - tell something sensible about a condition we no longer partake? Obviously a firsthand report in the sense Nagel meant when formulating "what is like to be a bat?" is out of reach but that does not mean we are completely ignorant neither. There are ways allowing a glimpse on the condition in question[101].

[101] Cf. with Gärdenfors (2006:16) making suggestions such as: 1) observation of different animal species, taking into account what is already known about their respective

Observations of animals in the wild, observations of animal behaviour under controlled conditions, data rising from problems in constructing robots and the development of artificial intelligence, all these allow a suggestion about the way animals akin to the human species have a world. Ideas about embodiment, situated and grounded cognition, proposals such as enaction, concepts borrowed from Gestalpsychology and constructivism, stressing action based negotiation rather than focussing on the ideal of knowledge… all these can add to it. There is still an approach from another direction too. The idea is to bracket features characterizing the modern human species thus rendering a sketch of what it is to be in the world without these capacities. It of course comes down to an artificial enterprise but it allows raising an idea on the condition once shared with species most akin.[102]

Only a few characteristics of the way existence is getting perceived and experienced, important for this exposition, will be mentioned.

- The scene lived[103] is global and monistic in which perception and experience collapse in to one dynamic unity. According to Merleau-Ponty the body provides access to the Umwelt. There is no distinction, no border between the experience of the body and the experience of the world. Piaget calls the condition of the new born in the first period of

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phylogenetic development; 2) the study of the brain as set of different layers with the eldest or most primitive at the centre while the most recent developments are situated at the outside; 3) the recapitulation theory suggesting/exposing developmental steps and 4) data from archaeological finds and from anthropological studies. For an informative overview on comparative research of the development of animal and human cognition, reference is made to MacLean et al. (2011). Their rationale agrees with the proposed approach "(…) if we understand how cognition evolves in nonhumans, this may in turn inform our understanding of how our own species' cognitive abilities have evolved." The following quote borrowed from a footnote by Coolidge & Wynn is also of relevance here. "These early hominines shared a cognitive phenotype that was indistinguishable in its major components from that of gorillas, chimpanzees and bonobos. These bipedal apes occupied the same cognitive grade as their knuckle-walking cousins." (2009:106)

[102] This approach has been discussed in full in the supplement (not yet published) to "The forgotten transition" (2018) as chapters 1 "Knowing the hypothetical initial condition" and 2 "Comparing the formal characteristics". In the latter more then forty differences are pointed out.

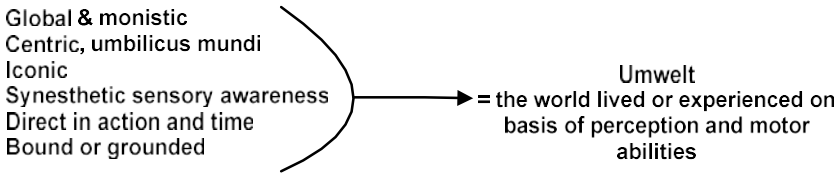
[103] "Lived" is preferred above perceived because the latter suggests one dimension, perception, while what is going on is an all encompassing experience.

life protoplasmic[104]. Eva Simms (2008) explains that making milk for breastfeeding is not an isolated activity in the mother but a shared reality between mother and suckling.

- Experience is centric or "umbilicus mundi". It is closely related with the previous characteristic. Simms calls this condition as a non-dualistic existence. It might be easier to understand this from its complement: it lacks a stance of existing in confrontation, there is nothing to be confronted with, no appreciation of considering from a distance. The organism collapses with all what is into one fluctuating field. The dynamic of homeostasis is another way to get grip on this condition. In that case the organism acts like a dynamic field mobilizing effort to eliminate a local disequilibrium disrupting the system. Replace organism by Umwelt, the whole within reach of perception, and organism and environment can be seen as one field eliminating disruptions in function of the primary motives.
- Existence is experienced as iconic. This has only to be mentioned because the modern human is experiencing the world from and through a narrative perspective. We "see" and organize the world through linguistic concepts building narratives. The idea here is to take this dimension out of the equation. Imagine a world without words, without concepts based on linguistics.
- Synesthetic sensory awareness, meaning that sensory is experienced as one event, not as different from one another isolated channels. In a sense as William James once called it "(…) the perception of infants blooming buzzing con-fusion (Chapter Discrimination and comparison, 1890). According to Deroy and Spence is the discrimination into different sensory channels a case of development (2013).
- Gestält-psychology: entities perceived and interacted with are best described within the conceptual frame of Gestält-psychology. A fluctuation in the field experienced, highly relevant in relation to the state of the primary motivation of the moment takes the form of a figure on the foreground. What is "hot" becoming salient, what is meaningless disappearing in the vague background.
- Direct in time and action. Action is driven from out the primary motivation (limbic system). There is no deliberation about different possibilities. Accordingly there is no time lapse going with consideration, the latter being absent. In so far a supporting implement is involved it is considered part of the dynamic embodiment (Cf. Kohler's

[104] This term is actually out of use. It refers to the content a cell in which every element is part of one living mass.

incorporation). There is yet another meaning of "direct". There is neither substitution nor sublimation involved. The action is immediately related to what fired it up.
- The event horizon is bound to the situation of the moment at that particular place. This goes with all the characteristics mentioned. The existence experienced collapses with what is getting perceived and experienced. For the modern human it is quite simple, he can escape nearly any situation by thinking about something else. Not human species can't.
This should suffice to render an idea of what is it like to experience the initial condition shared with species akin.
In the experience the organism *is* fully and undivided the situation at hand. It is "grounded". There are no questions to be answered neither voids to be filled. It not only is the central point in existence, it is dense dynamic existence itself.


Global & monistic
Centric, umbilicus mundi
Iconic
Synesthetic sensory awareness
Direct in action and time
Bound or grounded
Umwelt
= the world lived or experienced on basis of perception and motor abilities

It could be tempting to characterize this as blind however that would be the wrong qualification because this existence is not blind at all, it is full of meaning. It is even the question if meaning in this context can be discussed as if it was a distinguishable and isolatable dimension. It would be better to consider existence as implying meaning or that meaning is synonymous with existence.

A point should be made before going on with this line of thinking.
The condition mentioned deserves full attention. Not only because it is shared with species most akin, but because the characteristics provide the platform better still 'the breeding' ground, for further evolution. It is a fact generally accepted rather as an anecdote but seldom taken really serious. Whatever became within reach later, it all started from abilities available within the confinements of what has been described. Repeating Richard Leaky "we are the fifth ape" – that is: *we are an ape with all the basic characteristics of an ape* – but doing things differently. Stressing this fact wants to counterbalance the widespread tendency to consider this condition as something

belonging to a past long gone and completed in a definite way at the same time looking full of expectation in the direction of magic turning points of for instance a quantitative increase in neural matter bringing forth qualitative superior capacities. Stressing this condition forces to take the possibilities of the abilities mentioned more serious, and a step further yet taking into account changes into the environment exerting pressure on development of these abilities. As Pierre Jacob (1977) observed, evolution is not as much revolution but tinkering with already existing capacities.

What does all this has to do with "the mind"?

The goal is to point out the circumstances provoking a type of experience which in the end will be called 'mind'. These can however not be fully understood without taking the initial shared condition into account.

In what way is the hominin which will evolve into the human, diverting from the development of the great apes? That is probably the most plausible question to start with.[105]/ [106]
Two aspects are relevant.
In **first** instance the human makes use of means (instruments, tools) in a far more sophisticated way than other tool using apes. This is embedded in a different approach and way of negotiating the environment. It implies a changed attitude testifying of taking distance from and confronting with what is approached and, a stance of consideration in contrast to intertwinement and direct engagement of the initial

[105] Hominidea, hominin, human… in the context of paleoanthropology each of these terms has a particular meaning which I will not follow here. In this text hominin refers to the initial condition once shared with the species most akin, human on the other hand to the last stage of the evolution.
[106] An explanation taken the form of a comparison between twee states might provoke the impression that the transition occurred in one abrupt step. This is of course not the case. Most likely this was a process taking an enormous window of time, with interruptions, fallbacks and repetitions, a process more taking the course of a punctuated equilibrium as suggested by Eldredge and Gould (1972). The depiction offered here is an abstraction and idealization.

condition. This organization of action provides the basis but as mentioned it goes with a particular way of perceiving and that is the **second** and also most relevant aspect for this clarification.

What is of importance is the changed way the environment or the world is getting perceived, attributed meaning and understood. Commonly the focus goes in the direction of the cause and effect relation in a mechanic setting[107] by this neglecting the frame of reference from which things are appreciated, which actually is not of lesser importance for the way fluctuations are answered. In the initial condition the human shared with the species most akin, what is of relevance in the perception is a function of the interplay between the condition the primary motives are in and fluctuations in the dynamic field. From a phenomenal point of view, perception collapses with what is at hand in the interplay mentioned. There is no perspective on different conditions.[108] The hominin is grounded in and bound to the situation at hand.[109] In that condition there is no hominin neither an environment as isolated units interacting with one another but only one dynamic existence.[110] On the level of neurology behaviour is managed by the limbic and other lower neural systems. Amygdale, hippocampus and cingulated cortex in cooperation evaluate fluctuations and fire up appropriate responding behaviour. It should not be overlooked that the much praised brain started as a node – *as a node* - relating and coordinating different functional body parts, rather dimensions. In this capacity it has nothing of an Alladin's lamp from which mysterious competences emerge as ethereal fumes.
This is a tremendously simplified depiction of the condition the hominin finds himself in but the idea is to get "the feeling" what it is like to be in that condition.

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[107] A heritance of Galileï ('s zeigeist).

[108] It is tempting to speak of a lack of consciousness but this term cannot be used in this context because a knowing about in the sense of having knowledge on, a condition of consideration, can absolutely not be assumed yet.

[109] "situation at hand" is again a description only appropriate in later phase of development. But this way of expression is that natural to us that it is almost impossible to avoid.

[110] Who ever observed two dogs fighting *knows* that that there are two dogs but *sees* one furious dynamic organism.

Perception is not something apart from action; it is a dimension of an overall process. In that way changes in dealing with action supporting tools also change perception, i.e. focus and structural organization of the scene perceived.[111] Improvements applied to a particular tool for instance imply a perspective of taking distance, of confrontation allowing judgement based on continuous trying out[112]. Why and how this happened is not the subject here[113]. Only the fact that something like this occurred[114] is of relevance. What started taking place – *within the confinements of the initial condition* - might be called a micro novelty. It signified the onset into a way of dealing with the changing conditions of the immediate environment. At first it was only partial and specific, but gaining importance this mode became generalized.[115] Observe that the initial way of guiding behaviour by the limbic system remains in function but is getting complemented by an ever becoming dominant alternative mode of perceiving, attributing meaning and understanding the world[116].

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[111] This is different from the commonly accepted point of view that the eye leads the hand. The commonly accepted idea is that comprehension – fed by the eye – fires up the appropriate motor intervention. It is based on a cultural prejudice esteeming the ratio higher than lower motor capacities. The alternative suggestion that the scene of action attracts the focus is equally justifiable. I prefer to consider both to be dimensions of one move. Think of the act of eating. That is not restricted to the food pricked on a fork while the chewing mouth considered as something distinct. Concerning the structural organization this is about the difference between event and set of manipulable objects-organization.

[112] For a more elaborate discussion on this subject see "The Forgotten Transition", the first hypothesis in particular.

[113] Stoczkowski (2002) published a critical overview of twenty four scenario's occurring in the relevant literature.

[114] Rather must have occurred considering the type and sophistication of changes absent in tools used by other apes.

[115] In my opinion this actually signifies the decisive moment leading up to what in the end will be the typical human way of dealing with the World. For understanding anthropogenesis it is utmost importance but that is not the subject here.

[116] In which the associative and the prefrontal cortex are getting recruited.

Two observations.

1. The diachronic and a synchronic relation between both modes.

The first has already been mentioned. In pace with a changed way of dealing with action supporting implements as a particular type of action, another way of perceiving got introduced. It gradually spread over other sectors and took over the way the environment got negotiated. In the end it became a general perspective permeating all dimensions of existence, the default way of looking at and understanding the world (actually the way *we* perceive the world).

In synchrony both modes are present and active in changing importance. The limbic system is fired up in life important instances. In extreme danger or high needs the limbic system kicks in overriding all thinking based on the manipulation of symbolic tools.[117] Conversely when the feeling of safety and of satisfaction transcended a critical threshold behaviour based on rational reasoning has the upper hand.

2. The human mode of perceiving and attribution of meaning is characterized by a perspective on something, having something as an object of which there is knowledge in principle. The latter can be rich or poor, that is not the point. The Latin word for knowledge is scientia which is the same root present in con-scientia or consciousness[118]. That in short is exactly the overarching term for the human condition.

That condition is peculiar and exclusive. The modern human is able to recognize that there is a situation of being unconscious but this can only be realized from out a condition of being conscious. He is able to have knowledge about the workings of the limbic system operating on the level of unconsciousness but again, he can only realize and express this knowledge as a manifestation of consciousness. It is common practice

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[117] It is a mode also addressed in techniques aimed at influencing in general, sales strategies, propaganda, ideological manipulation etc. Edward Bernayes making use of the insights of his uncle Sigmund Freud can be considered the instigator of the professionalisation of this practice.

[118] Here consciousness is taken in the narrow sense with scientia or knowing as core. And knowledge is always about something. All later supplements such as qualia are left out in this approach. I consider these as the result of the trajectory the scientific method took making abstraction of all features not fitting the new approach. Orphaned and in time these became added to the realm of consciousness.

to consider being unconscious as a condition in the same sense as consciousness is taken to be a condition, the only difference that one is the converse of the other. But as made clear that is not the case. The knowledge about the condition of unconsciousness is actually a manifestation of the condition of being conscious.
This might seem nitpicking. It is however important to make clear that being conscious is a mode of perceiving and attributing meaning which is – and this is the important part – exclusive. The human experiences himself *only* as being conscious[119]. The act of consciousness is the organizing principle underpinning the human culture in contrast to the animal existence. Observe that consciousness is not presented as a capacity but as the whole of an act and i.e. a particular type of operations, and the experienced effects of that act[120]. The human only knows about the world through consciousness which as a constructive filter gives form to the particular way the world is getting perceived. He might be convinced that he is in direct contact with emotions, aches, needs etc. These are of course present but always enrobed by the filtering consciousness.
Does an animal enjoy pain or consider starvation a virtue? Most probable not while the human can. Of course he is physiologically experiencing pain in the same way the animal does, but he enrobes it in an appreciation which can reflect pain straight forwardly but for all we know also be considered a positive sacrifice.
It is also common practice to consider the world one is conscious of as *the* world, the *only and real* world, while it actually is the appearance of a particular mode of perceiving and attributing meaning. In brackets, it is an effect following from a particular way of dealing with action supporting implements which provoke displacements in the experience.

Does all this has anything to do with the mind or better still, what does it has to do with the circumstances which much later will be understood as mind-like consequently called mind?

As mentioned the crucial issue in this context is the way the environment is perceived and given meaning. For the hominin in the initial state shared with other species the

[119] Philosophers will recognize the point taken by Berkeley, Kant and Husserl.
[120] A conclusion formulated in my doctoral thesis, alas not published nor translated into English.

circumstances might be called harsh and heuristically challenging but not what could be coined cognitively problematic.
What is that about?
For the hominin the way of answering a particular situation is determined, genetically programmed, learned by the example of the parents and/or acquired by experience.
In the alternative mode based on the application of implements as second order stimuli displacement in space and time in short imagination, is self initiated.[121] This allows different explanatory narratives and models about eventual responding behaviour[122].
As mentioned this mode of interpreting fluctuations in the environment overarches and covers the predetermined older mode.
In earlier versions I used to refer to this condition as opening a disturbing abyss which had to be filled in with a comforting or distress reducing version. But the insight grew that this might actually not have been the case at all.
Take the following recent situations involving the introduction of novelties in daily life. I am old enough to have witnessed a time where a television was an experimental gadget only within reach of sufficient rich eccentrics. In the part of the world I am living in television became present in households from 1955 on and the number of receivers exploded with the World Exhibition of 1958. It gradually became commonplace such that the previous period seems to be erased from memory. For younger people a similar experience can be imagined in relation to the home computer and to the access of the World Wide Web. These novelties took possession of the practice of life leaving no feeling of absence in relation to the life style characterizing the previous period. I hypothesize that something similar must have been the case with the introduction of the ability of initiating displacements in space and time in the experience. The new way of perceiving the environment took over, very gradually – recall the enormous window of time spread over millions of years.[123] In stead of having lost some type of perceptual

[121] An animal provided with a central nervous system is also subject to imagination, but it is always cued by circumstances. For a more elaborate discussion, The Forgotten Transition (J. Gilbert, 2018) On the possibility of animals undergoing imagination : R.W. Mitchell, chapter 24 in Kind (ed.), 2016

[122] Cf. Dennett's suggestion on the tower of test and generate.

[123] The evolution demonstrated by the form of tailored stone tools is the yardstick for this.

perspective resulting the feeling of a gap to be filled, the experience must rather have been one of hesitantly gaining a novel practice without looking back.[124]

As said for the hominin the circumstances might have been called harsh and heuristically challenging. Their mode of response changed when a particular way of mediated manipulation became introduced. It brought with it considering about, an act of reflecting on a situation.[125] It is that new dimension of experience offering the characteristics which eventually will be conceptualized into an assumed instance called "mind". It will characterize the human in a decisive way. [126] Besides, the idea that there is something like a mind only exists from out these conditions; conversely for non human animals not having undergone that kind of development that meaningful content does not exist at all.
It marks the turning point where the transition from the hominin into the typical human condition takes place. In short, what is *understood* as the mind has an evolutionary substrate.[127]

Bridging the human condition to historic variations of the mind

In the previous part the relevant core for this subject got introduced. As a reminder, displacement in space and time as novelty and the catalyst fired up new horizons. As such it provides the human condition with one of its most remarkable characteristics; that is becoming able to escape from being grounded and bound to the situation at hand. It not only freed the hominin on his way becoming human but forced him to build

[124] "Looking back" is actually an anachronism as this requires the ability to do so, usually called consciousness, which in my opinion could not have existed at that moment as the novelty at stake here meant the onset into this ability.
[125] This has been discussed at large in other publications such as "The Forgotten Transition".
[126] "Mens" is Dutch for human; it refers to an organism provided with a mind.
[127] "Understood" has been stressed. It does not imply that actually there is something really existing like a "mind".

narratives[128] and adopt a particular version allowing to guide behaviour. This novel way of negotiating the Umwelt covers the condition in which the hominin finds him-self but it did not eliminate the prior condition. It actually sits in the background ready to take over in life threatening circumstances.
Introducing displacement in the experience provokes enrapturing, a condition of exaltation also encompassing a dimension of information[129].

Entering the new way of perceiving the Umwelt the early human is the subject of this mode and he is this in an inescapable way. Heteronomous determination did not dissolve in thin air but as said remains in the background to take over in life threatening situations. In these circumstances the human is forced to give meaning by the technique of introducing displacement and this way developing narratives and making a choice between the different versions. These versions have a twofold function. On the one hand they offer explanation, make the "world" understandable, on the other they organize input in meaningful scenes and events implying indications how to respond to the situation present. They are not two dimensions divorced from one another, both conflate into one dimension of depicting at the same time holding indications about behaviour deemed suitable.[130]

In the following pages about twenty historical snapshots will be offered playing a role in the formation of the different versions of understanding of "the mind".
However there will be a kind of chronology, the scenes offered should be seen as pieces filling up a puzzle and as such little more than rough sketches. The goal set is to put

[128] See also Dennett referring to multiple perspectives and the center of narrative gravity (Dennett, D. 1992)
[129] Only from an analytic point of view exaltation and information are getting divorced. Every unit of information is embedded in a dimension of being moved. Compare with Austin's (1962) reference to a perlocutionary effect, also with Watzlawick et al. (1967) relating the informative dimension of an utterance to the behaviour regulatory one.
[130] The representation as two dimensions is only the case in a scientific framework and often even there… It could be argued that science is not neutral in an absolute way but a particular type of discourse (be it with fruitful effects).

down broad interacting lines exposing a development. There is of course an extensive body of literature available on each of the themes mentioned.

Displacement giving rise to the concept named "mind".

Manipulation of means in function as stimuli of second order[131] brings forth content in the experience, content characterized by reference to events or states occurring in other locations and in most cases other moments in time.[132] As such these might rightfully be called displacements.[133] But from a different point of view they bear the character of narratives and in so far a function of language is considered to provide information by way of transferring narratives, this practice could be understood as language.[134]
Apart of this clarification what is of importance?
1. It stresses the character of action;

[131] Cf. Vygotsky, to be understood as substituting first order or authentic/real world stimuli.

[132] This is the simple approach sufficing for the actual goal. More comprehensively displacement is a feature of the use of means as second order stimulus and has a distancing effect also in wordings referring to a first person mode occurring in the present (cette distance nulle, coined by Sartre). This needs a more elaborate approach exceeding the actual setting. Reference made to Gilbert (2018) in particular parts II.1.1.5. Association and displacement; II.1.2. Modification; II.2.2.5. Displacement, freedom and reification and IX. On the feature of distance taking.

[133] Morford & Goldin Meadow (2001) speak of "displaced reference" and Gärdenfors (1996) of "detached representation". Coolidge et al. observe "(…) consider the tool showing a permanency in time as the stage on which displaced reference could come into being." (in Bruner, 2015:182) Consider also Friston (2005), Bar et al. (2006) discussing predicative processing; further the active inference theory of Friston et al. (2017); the idea of mental time travel as offered by Tulving (1984), Suddendorf & Corballis (2007) and by Suddendorf (2013).

[134] The linguist D. Bickerton stresses the value of displacement "There is good reason to choose displacement as the first protolinguistic development (in Arbib and Bickerton, 2010:168, 171-2). It is also one of the design features of language in the classic overview offered by Hockett and Altman (1968).

2. in a twofold sense: it is performed and its goal is to provoke an effect in the recipient (in first instance the other but at the same time the actor himself)
3. which in principle is prone to observation[135], there is nothing in there pertaining to thin air.
4. Language can be understood as a mode of action introducing narratives.
So far the core of a novel skill, which functioning as the catalyst, is underpinning further development.

The character of the early narratives

The very first condition of narratives in particular, language in general is to be understood as a way of behaving in given circumstances, it is a way of being, pure and simple. The depiction of language as a dedicated mode of transferring information is a (much) later interpretation of, or consideration on what language actually is.
In that sense language is literally an act of instantiating meaning. The easiest way to understand this condition is by referring to how a child understands a denomination. The name for something does not refer to something but collapses with it. "Mom" collapses with a particular woman; it is experienced as a dimension of the women. "Tree" is not the name given to some item; it collapses with what is perceived. Children are absorbed by the fairy tale as are adults by a novel, a movie or music.[136]
So language is an act not giving but instantiating meaning. It is what I like to call "an articulation of existence" in the same way any kind of action is.
Hence language is in first instance a mode of being present. In its narrative function it can take different forms such as an epic account of heroic achievements (Darius), history more in general (Herodotus), a report of important events (Homer on Troy), codices (Hamurabi), revelations (bible, Veda's), transactions, inventories etc. Whatever the

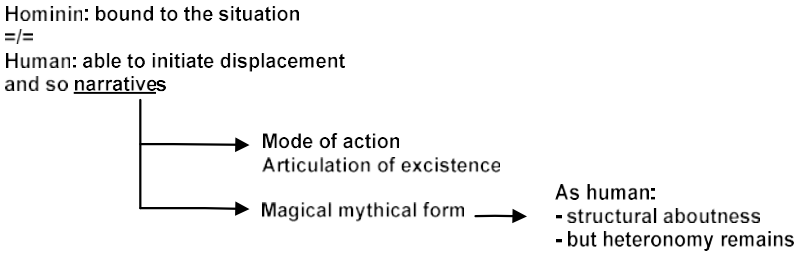
[135] Even endophasy (inner speech) has proved to be observable. A.N. Sokolov and co-workers succeeded in measuring variation in tension in the buccal area in the case of public speaking, whispering, inner speech and mental calculations (1972:161).
[136] Cf. With the Scholastic discussion on realism versus nominalism. Further the first caves depictions have to be understood as instances of presence and not as mere depictions of something absent. A crucifix is an easy and still actual example of this. It is not a picture of the Christian god, it offers an immanent divine presence.

content it can be situated on a continuum with pure observation as one pole and meaning giving as the other, always bearing characteristics of both but with a changing ratio.

The meaning giving dimension bears a magic mythological character. The heteronomous determination characterizing the hominin got replaced by a new form of heteronomy. External factors became considered as the causes of the actual circumstances. What changed was not the heteronomy but being caught in an absolute sense by external determinants, got replaced by a self initiated process of attribution however projected on external elements.[137]

At this point there is an important remark to be made.

Remember that the hominin experienced an existence of the organism and Umwelt collapsing in to one whole. The human is different in that respect that his experience of existence is characterized by a structural relation of aboutness while on the level of semantics by projecting causes on external factors (e.g. forces of natural elements) he maintained heteronomy.[138]



So far, for sketching out the conditions from which the concept of mind will find introduction. This is the right moment to start with summing up pieces of the historical puzzle.

[137] In a later phase this will be replaced by attribution of causation to the actor himself. This is quite interesting because there is in principle no difference in attribution to something else and attribution to one self. Cf. Gopnik observing that there actually there is nothing privileged to the so called privileged access. It is in any case based on the same type of making inferences. (Gopnik, 1993)

[138] This will be contrasted to semantic aboutness later.

Transcending the concrete: money and moral as early signs of abstract thinking

Money

Money got introduced around 600 BCE by Alyattes of Lydia as a tactical step in warfare.[139] Until then gangs of warriors robbed the local people who after that catastrophe could no longer provide themselves let alone the wandering gangs. This king started paying his soldiers with heavy currency which they could trade with the locals.[140] In so doing the latter stayed alive and productive and could continue providing provisions to the passing armies. But of importance for us is that this is a novel way of appreciating the value of things. Previously trade was based on barter of goods and services. Something concrete was on offer and changed hands for something else. But the coins made of precious metal had a double value. In first instance it still was a type of barter, for example one coin of gold for a cow. But while ten chickens had no meaning for someone not in need for chickens, a coin of gold or silver could be kept and changed for anything else needed at a later date. Value became disconnected from a specific and particular instance and gained a kind of neutrality. It took in the process of bartering an intermediate position. It became a concept in its own right totally disengaged from an individual meaning. This was a new way of appreciation. The concrete became replaced by the abstract, i.e. the specific value of something individual got stripped until only a neutral or rather decoupled value remained.[141]

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[139] On the introduction of money for example Richard Seaford (2004) published an informative volume; Davies (1994)on the other hand provided a more general approach.

[140] The value of the coin was larger than the value of the material the coin was made and was guaranteed by the monarch.

[141] "…when coins and cash economy practice facilitates the acquisition of abstract and representational arithmetic" (Saxe & Esmonde, 2004, 2005) mentioned in Boesch, C. 2007. What makes us human? *Journal of Comparative Psychology*, Vol. 121, No.3, 227-240.

Good and evil as introduced by Zoroaster.

Money appeared around 600 BCE. But something akin to the abstraction mentioned got introduced in the period between 1400 and 1200 BCE on the border of what today is known as Iran and Afghanistan.[142]

Until then evil took a concrete and thus observable form. It could be a tribe threatening the community or a neighbour stealing cattle etc.

Whatever the motives living in the background, of importance here is that Zoroaster added a new dimension. In his proposal there was a fierce tension in the heavens going on between Ahura Mazda, the wise lord and Ahriman as the incarnation of evil forces. In organizing their earthly life the mortals had to make a choice. By this the concrete form of good and evil got transcended by an intangible ideal form.[143]/[144]

Both, abstraction in the appreciation of value and the introduction of instances of ideal nature, illustrate the tactile and perceivable world becoming supplemented by a realm of intangible aetheric nature. These are dimensions entering the experience, contributing to what in time will be conceptualised into the "mind".

Techne and theoria, from practice to concept

One should be aware of a particular way of ordering things. When providing information about events contributing to the content of the mind we seem to accept an instance called mind already present which consequently has to be fleshed out. But this direction should actually be reversed. Goethe observed rightfully that "in the cases

[142] There is fierce discussion on when Zoroaster actually lived. The suggestions vary from the 2nd millennium (Mary Boyce, 1982, for instance on the basis of linguistics) to the 7th century BCE (Shahbazi, 1977).

[143] Not to be understood as a goal to pursue but in Plato's sense as something intangible (think of the ideal geometric forms), something aetheric transcending the material realm.

[144] It is not clear if there is some relation but a similar move occurred with Orphism introduced in Thrace around 6th century BCE.

something is happening and a label seems to be absent a name will pop up in good time".[145]

Bringing this idea into practice a condition in which there was no such thing or better concept such as mind should be suggested. Speaking for instance did not sprout from an internal mind-like source; it was an act as natural as taking a breath. It was a dimension of being in and of doing something to the world. Auditory hallucinations were not voices in the head taken today as a symptom of a psychotic condition. They were experienced as being caused by exterior forces.[146] Concluding, certain events must have been happening which eventually provoked the introduction of an appropriate term. The intriguing question is what exactly might have been happening?

The following borrowed from Richard Parry (2014) might provide a hint about one factor having part in that process of becoming. It is about the shift of an activity of mainly tangible, observable character into the polarization of one aspect of it which by this gains the status of a more ethereal content no longer directly prone for observation. In short it is about the evolution in the understanding of techne and episteme.

Parry distinguishes three stages.

In the first there is no division (yet) between theory and practice. Epistatai refers to the ability to perform some action while techne refers to the skill of doing it. Socrates in Economicus uses both terms without distinction. The function – in the sense of knowing and doing how[147] - seems to be of central importance. This becomes particularly clear by the fact that the dimension of knowing how not being embodied by skillful action is considered to be worthless. In Plato a difference starts to appear in some cases (not in all). Techne stresses the skill as in farming, riding a horse, geometry, calculating and the

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[145] "Den eben wo Begriffe fehlen, da stellt ein Wort zur rechten Zeit sich ein." Goethe, 1808. Faust, der Tragedie erster Teil.

[146] I am not going all the way with Julian Jaynes but he offers striking illustrations of that condition in his book dating from 1976. This condition of being in the world is what Heidegger refers to as that mode of being that has been forgotten (Seinsvergessenheit).

[147] We have to realize that today we make a clear difference between both terms. To us using these relates each automatically to a particular meaning while for the period referred to in this case they should be taken as aspects or dimensions of the same unity.

medical practice[148]. Note that the last examples refer to practices we today are inclined to see on the cognitive rather than on the technical side.
In the second phase a clear shift is taking place.
The action brought forth by a medic has two aspects of which the epistemic dimension refers to the knowledge supporting a therapeutic intervention. He knows how to approach the body in order to judge (knowing/epistathai) the condition of it to be healthy or diseased. He understands the goal of his action. That judgment is realized by looking. Here the term "theoria" becomes appropriate because it is derived from the term "theatre" meaning looking to what is shown. At this point a subtle shift takes place. In Gorgias one has to account for its intervention so judging of considerations becomes more prominent. Summarizing, the execution of a skill goes with knowledge about how to do. Both become discerned but are still intertwined.
In the Republic V, and by this we reach the third phase, episteme shifts more in the direction of the skill – still the skill (!) – of knowing reality. It is particularly of interest that for Plato reality referred to the ideal forms, not particular things in the world.
With Aristotle the distinction between techne and episteme becomes definite.
There is yet another anecdotic version on the origin of this distinction and again it is based on medical intervention. Medics apply a skill at the same time of course knowing how to execute that skill. In order to provoke and facilitate cooperation of the patient they explain what they are doing. As such their knowledge slowly becomes a corpus of explanations and procedures, something in its own right which can discussed. Here too theoria comes in place.
This offers a striking illustration of an interaction initially taking place in the realm of the tangible over time getting divided in two parts of which one becomes from then on appreciated as "theoria" a more ethereal substance.
This does not only divide which was one in origin in two parts, theoria and techne, it also sets and consolidates the relation between both for a quite long time. Definitely with Plato theoria belongs to the realm of the ideas while the technical approach focuses on providing a solution on down to earth problems. Only quite late or conversely quite

[148] The meaning of empirism is also going back to the medical practice. "Peira" stands for trial, "empeiros" for skilled trying out (Cf. Bas van Fraassen, The Empirical stance; 2002:201)

recent the marriage with the scientific method provided techne with a creative development of exponential magnitude.

Early Greek mind related concepts

Neither the Iliad nor the Odyssey (8th century BCE) refer to some instance which today would be understand as personality[149] or as mind. The whole realm of something mind-like, so evident to us, did not occur. [150]

According to Snell (1982) the body got experienced as interplay of different forces in the same way the environment is getting experienced. Heidegger refers to Parmenides, 6th century BCE, in whose thinking being (einai) and the thought (Das Vernehmen) collapse into one, aletheia or that what is not hidden showing itself. Terpander, a poet living in the 7th century BCE, begs the phrenes to compose a song. Situated in the region of the diaphragm these are involved in planning. Another poet from the same period Archilochus speaks of his thymos (passion, desire, agitation) as a weak soldier submitted to forces thrown down to the ground. All these forces are approached as if they were another person.[151] Alcmaeon of Croton, a pre-Socratic philosopher is anxious to know about the nous of the other. This refers to a clear perception, watching, seeing, recognizing.[152] Sappho of Lesbos a female archaic Greek poet expresses that love has an onerous effect on the thymos at the same time shaking the phrenes. Thymos, phrenes and nous, all ended with death.

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[149] The first signs of taking emotions into account by this referring to a person, can be dated around 5th century BCE when the epic style of narrative got supplemented by a lyrical one. However emotions in that period should rather be understood as passions. The secularization and naturalization into the meaning of emotion as understood today only took place in the 17th century. (Makari, G. 2016. The Soul Machine (…)

[150] For a thorough discussion on the subject of the history of the mind, Erneling C.E. & Johnson D.M. (eds.). 2005, in particular chapter 2 by T.H. Leahy; A historical philosophical exploration. Of course the basic work of Bremmer may not be overlooked (1983).

[151] A man no longer moving, i.e. died, his thymos has left him.

[152] According to some "noös" originally referred to the nose and the sense of smell as faculty of identification.

Blood and breath were the prototypical signs of life and were caught by the term psyche, an interpretation common up to the 5th century BCE. Soma did not refer to the body but to a corpse. After death without the capability of the body the psyche or phusys was crippled, deprived of feeling, thought and the ability to speak. The burial of the body was necessary in order for the phusys to pass over the Hades. Remarkable detail: woman, children and young man under the age of adulthood never got buried in the ritual right way so their phusys never crossed the river.
So far for a few examples feeding the impression of a life experienced as a stream of forces and matter in a concrete tangible fashion not akin at all to a thin air like dimension. The idea of some mind like realm was still far off.[153]

The introduction of the invariable

Take a step back to the condition of the early narratives. Linguistic expression was part of the instantiation of existence. This provided the basis for further development.
For a next step there are two sources or interpretations which will be introduced briefly.

Morton and Harman as source
Timothy Morton in "Dark Ecology" (2016) drew inspiration to some degree from Graham Harman. The introduction of agriculture provides the core. The author considers the Western culture as the living manifestation of changes in appreciating the world, changes introduced at that time in Mesopotamia. Agriculture stood for a new way of providing food by this changing the style of life intrusively. Hunter-gatherer communities had a short term time perspective. Possessions were scarce. But agriculture did not only provide the immediate needs, it also allowed stockpiling for the future. That way a reserve of food becomes a constant presence.[154] Even in times of famine it is

[153] What got offered was extremely fragmentary only meant to illustrate a certain point of view. For a fascinating and in-depth exploration see for instance the publications of Snell, Onians, Nisbett, Cromer, Lloyd, Parry, De Ley

[154] However not relevant for this story, it changed profoundly the hierarchical organization. Property claims on the reserve came into effect with accumulation of

considered as lacking - meaning something which should be there but is not (at that moment). While the previous period was characterized by fluctuating and uncertain conditions, in the perception of the farming community some quality of being constantly present got introduced. Even the awareness of the absence of it in times of crop failure made it present in the daily experience. As such something invariable, crops as the tangible stuff but most importantly the idea of something supposed to be present got introduced and became experienced as a fundamental quality.

Geoffry Lloyd (1991) offers a different explanation. The overseas trade made the Greeks quite wealthy.[155] It enabled them to provide the youth with a good scholarly education, the art of debating as an important discipline. That practice implies the balancing of one argument against another; in short they got confronted with the problem of subjectivity. It brought the need for an objective benchmark as criterion to evaluate to life. Observe that – ironically - the need for what in the end would become called objectivity sprouts from a set of subjective opinions as breeding ground. In other words the highly valued objectivity is actually built on an instable surface of subjectivity. Cutting corners, nature seemed to offer stability or invariability.[156] So the idea of nature as the whole of what is out there got provided with a new meaning, nature as the prime example of that what is stable, in short invariable. This particular meaning can be recognized in the question into the nature of a person. One wants to know the characteristics which define a person through time, these which are invariable.

Both refer to a moment of introduction. For Morton that came with agriculture, for Lloyd with a threshold in the realm of the exchange of ideas. Both refer to a kind of

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property, mechanisms of distribution and with owners and guards. The introduction of agriculture may rightfully be considered the most drastic all changing revolution ever taken place. By some, Friedrich Engels for instance it is considered to be the linchpin for the transition of a matriarchal into a patriarchal society, an idea on the other hand criticized by Cynthia Eller (2001).

[155] "Greeks" is shorthand here for the seafaring and trading peoples around the Aegean sea.

[156] It is absolutely worth reading the original text.

invariance entering common thought. But whatever the causal circumstances the introduction of the invariable as qualitative condition is of importance. The introduction of a substantive signifying a transition from an uncertain and ever dynamic context into a scene where some anchor point, something stable, something invariant is appearing; at the time a completely new idea.

This might be welcomed with surprise. Is the objectivity of the world being there as something that actually is - not a natural given then? In philosophy this position is known as naïve realism. From that point of view the world experienced is without any form of hesitation taken for granted.

But recall that generating narratives as explained is based on a skill. It is not a sudden popped ability opening a window in full transparency on what is really out there. As a narrative is a vital interpretation, but an interpretation none the less. This changing appreciation in early Greek thinking has intrigued scholars like Nietzsche and Heidegger, but also contemporary researchers like Nisbett (2003), Cromer (1993), Parry (2014), Snell (1960), Onian (1951) and Jaynes (1976).

In short, in a dynamic fluctuating tense an instance with an invariable stable character got introduced.

Formulated differently it is an expression of "that what is" or "being that" in Greek hoti esti, or quite directly "existential" in contrast to "essential" a condition which will be dealt with further.[157]

Interestingly this novelty in appreciation provides the base for the principle of excluded middle. Something is (hoti esti) or is not but not some condition in between.[158] It may seem trivial from an actual point of view, it however were novel positions and interpretations then.

There is an important observation to report. The introduction of "that what is" signifies the very first stepping stone into the particular way the world is getting understood characterizing the Western way of thinking.[159]

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[157] Cf. "Aristoteles and Philoponus on light" by Jean De Groot (1991/2016)

[158] This refers to the period of Aristotle; recently fuzzy logic has been introduced by Lukasiewicz and Tarski in the 1920's, elaborated by Lofti Zadeh in 1965, as paraconsistential logic has been by Miro Quesada from 1976 on.

[159] Other cultures remained subordinate to some sort of revelation, extra natural and divine instances or the rules of kings considered to be of divine nature. Research when

The quest into the character of "that what is"

Once the concept or the understanding of something being there (hoti esti) installed it would be only a matter of time before the question into what the nature of "that what is" would pop up. This actually took place in the 6th and 5th century BCE.
"That what is" provoked the question "what is the nature of that what is?" Or "hoti esti" became followed by "ti estin ti". [160]
The scholars introducing that question were called the philosophers of nature meaning the philosophers asking the question into the nature or the character or the essence of "that what is" considered to be there in a substantial way i.e. testifying of an existence as something standing on itself.[161]
So the in first instance exclusively dynamic has been replaced or complemented with a dimension of stability or invariance in some aspects[162] provoking the question into the nature or the character of that what is invariant.
I have referred earlier to structural aboutness i.e. a narrative cannot be else than describing some thing or event, it is always about something. That is demonstrated by the structure of a declaration.
With the question "what is that that what is" the structure maintains the structural aboutness mentioned but besides that a new type of aboutness appears, in this case on the level of semantics. A story is told and the focus is aimed at some element being part of that story. The story is "there is something existing in its own right" and now the

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occurring was executed in function of these authorities. The "Greek" culture often also had an ethical dimension (good and virtuous life) but a glimpse of a secular characterized interest started to emerge opening the pathway to Western thinking.

[160] What is . . .?" One of Socrates' standard questions: What is courage? What is friendship? Aristotle supposes that the answer to Thinking the question—in Greek, to ti esti—should be a definition of the term, and that what corresponds to that definition is the "essence." Thus, to
ti esti is one of the designations for what we call essence. (Preus, 2007:266)

[161] Not to be confused with the philosophy of nature as approach introduced by Schelling in the 19th century.

[162] Clouds are moving but they have invariant characteristics making them clouds in the first place.

question is "what is the nature of that element" hence the denomination of "semantic aboutness". It could as well be said that by that question the element is becoming an issue. This is the second stepping stone in what would characterize Western thinking.
Summarizing, there in the first instance is the aboutness in technical sense which originated in the process of objectification through the act of tool-making. Now implemented on top of that there is in second instance occurring in the "Greek" period the aboutness semantic in kind when the content of the narrative seems to pose the problem. The essence or nature introduced in the storyline becomes problematic or, the question now is: what is the essence of the invariant quality raised by the story as in "What is the essence of life, or of nature (as that what is outside)?" The latter is aboutness again but as said on the level of meaning or semantics.

Particularities of the West

As subjects of Western culture the particularities of Western thinking come as natural and not as culture specific. The following tries to illustrate this specificity.
Nisbett (2003) sketched out differences between Western and Eastern ways of perceiving and interpreting the world, in short different perspectives.[163] According to Cromer (1993) the Western appreciation is rooted in ancient Greece.[164]
It comes down to the following opposites.
In the West the object got seen as an isolated instance with an essence (hoti esti) while the East focussed on events and relations. In the West the question into the nature of the object got asked while the East looked to the context in order to find determining forces. In the West objects became categorized by their properties. In the East the focus remained on the relationships. The West stimulated individual identity and autonomous initiative, in the same sense as the focus on the object in isolation. The attention was directed on the features defining the essence of the object, parallel to characteristics of initiative and creativity defining the individual. In the East the social role in relation to others was central. Self-control in function of the social network was highly appreciated.

[163] For this subject also Sarton (1948), chapter 3.

[164] Again, Greece here is the shorthand for states and communities around the Aegean Sea.

What is the relevance of this in relation to an understanding of the mind?
It is about the development of the content of that dimension of the experience which seems to escape the tangible.[165] At first it was the act of articulation of existence, later the introduction of that what is followed by the question into the nature of it. It asks into the nature of that what makes out the world (as perceived). It will eventually focus on the nature of the mind itself and as already has been made clear the answer changes over time.
A word of caution is in place. Not being tangible does not exactly mean not material in absolute sense. Anaximenes of Miletus compared it to air, intangible but still some kind of stuff. Pythagoras offers an anecdotic illustration. He warns not to eat (too much) beans as it promotes flatulence and by this allowing the soul to escape the body. The idea of some kind of thin air had a long life. It got promoted around the 2nd century CE[166] and remained to the late 1600. It was thought to reside in the ventricles of the brain, an idea fostered in the transition from the 16th to the 17th century by Francis Bacon.

A gradual introduction of mind-like characteristics

The change took place in the same period as the invariable got introduced.
Until then psyche got understood in the same way as taking a breath or the flow of blood, almost tangible. Gradually it became accompanied by new meanings.
According to Jaynes (1976) Pythagoras after his travel to Egypt in the 6th century BCE, brought the idea of a transcendent instance into Greece. There the "ba" was the depiction of the "ka" the latter referring to auditive hallucinations as in an oracle hearing voices. The "ba" often got presented with wings facilitating the suggestion that it could escape into the air, into thin air rather as that escape itself could not be

[165] The following offers a taste of what is meant. Cloud-computing is commonly considered as a mysterious action somewhere hidden in thin air, escaping concrete action and location.

[166][166] The idea was in origin Greek and promoted by the Stoic. It was considered to be the active generative principle organizing all from the individual to the cosmos. The human soul was seen as part of the pneuma of God.

observed. This interpretation held by Pythagoras was according to Jaynes, flawed but it nonetheless introduced the idea of an instance transcending the tangible dimension.
The introduction of psyche in that transcendent guise resulted in what could be called a semantic tension. "Soma" formerly understood as corpse now became the opposite of the psyche as transcendent medium. Soma became body tout court. The relation of dualism sneaked in and provided from then one part of an overarching framework into which further understanding got organized. The other part was the question "what is (the nature) that what is?" (ti estin ti).
With the latter question lurking in the background philosophers of nature found themselves confronted with the task providing an answer. Overtime different versions got introduced. Some believed water was most essential, others opted for air, earth or fire. Some went so far suggesting the indefinite or apeiron as the ultimate or the smallest of particles. Summarizing, on the question "what is the essence of that what is there as an invariable substance" the answer had to be formulated from out a dualistic determining framework.
Plato and Aristotle have to be understood as attempts in providing an answer to that question. With the dualistic[167] pattern firmly installed, their versions are of determining significance for Western understanding of the world.[168]

Pillars of Western thinking: Plato and Aristotle

Plato lived from 427 to 347 and Aristotle from 384 to 322, an overlap of 37 year.
In formulating an answer to the question mentioned **Plato** distinguished knowledge gained by the senses and knowledge appearing out of reminiscences generated by the soul once part of the realm of ideas. The first was only appearance hence unreliable. The second however exposed the ideal forms. Of relevance for us is the dualism of which the poles are appreciated in a very different way. On the one hand there was a sense based and thus material dimension offering no more than appearance while on the other hand reminiscence of the ultimate truth (eidos) became glorified. Dualism and glorification of the immaterial pole is the pattern which will remain present to this day. Until the 16th

[167] The depiction offered by Pythagoras did not install dualism as such but the suggestion he made had a dualistic positioning of parts as effect.
[168] In so far that Whitehead observed that the whole of Western thinking is actually a footnote to Plato.

century the endeavour was to know God by reading the bible. From this time on God could also be known by reading the book of nature written in the language of mathematics. In that sense practising mathematics as the manipulation of ideal contents got glorified. And however technical knowledge gained appreciation since the 18th century onwards, the pure theoretical way of doing science still has an edge on technology.

Aristotle follows at the same time diverts from Plato. He is of course taken by the same drive to provide an answer on the question into the nature of that what is. He also subscribes a type of dualism between matter and soul. But he differs in the way that or rather these souls are characterized. Not as instances which once lived in the realm of the ultimate true ideas, but as forces driving the living organism to realize potentiality. In that sense plants posses a vegetative soul in order to fulfil nutritive, growth and reproduction potentialities while animals have a sensitive soul allowing perception and locomotion. The human is equipped with a rational soul allowing reason based thought. So the human as an organism is not a case of matter plus a rational competence, it is a living entity striving to fulfil potentiality. He is fully dynamic in that respect. That is an important characteristic for our story as will be made clear later when mentioning Galileo's move. It will eventually add to the content of what will be considered mind.
Plato has been of influence on Christianity from early days on.[169] The writings of Aristotle have been obscured for the Western culture for many ages. They got translated in Arabic by Muslim scholars such as Avicenna and Averroes and around 1200 into Latin. So the ideas of Aristotle became only influent from then on.

Immortality contributes to the ethereal

In the dialogue Eudemus, Aristotle reflects on the Platonic soul imprisoned in the body capable of a happier life only when the body has been left behind. Aristotle agrees that the dead are more blessed than the living. Dying in that respect is to return to one's real

[169] It would lead too far off but that type of soul got recuperated by the Christian doctrine. In that sense the 17th century depicts an evolution into a secular interpretation again (Luther and Descartes versus Hobbes for instance).

home implying that the soul transcends the death of the body.[170] This in line with Philon of Alexandria a Jewish philosopher who lived from 25 BCE to 45 CE believing that the soul returned to its prenatal situation after the body died. The Roman poet Titus Lucretius (99-55 BCE) considers the soul made out of atoms smaller in size than those of the body. The soul grows in par with the body and after death she vanishes in thin air.
Many centuries later Thomas Acquinas rejects the suggestion of Alexander of Aphrodisias that body and mind are one. For Acquinas the intellectual capacities have no need of a body. Moreover following Averroes he defends that there is only one soul and not three as Aristotle suggested.
The reference to intellectual capacities also makes clear that the different terms soul, mind and consciousness are actually used interchangeable. It is only later that consciousness for instance acquires a particular content.
"Con-scientia" going back on "con-scire" originally meant to "knowledge we hold in common".[171] In a later period it referred to a closed company such as a family having knowledge of some facts of which the outside world was ignorant. Later again being conscious referred to the act of an individual preferring to hold information to himself. Finally the term meant exclusively to that type of information only knowable by the person himself, no longer a matter of choice but a psychological condition[172].

Judaism and Christianity are mentioned indirectly as by the reference to Acquinas. Without doubt they both represent important lines of force in the development of Western culture. But for this story they only repeat what is already present: a soul, a moral guideline and immortality.

Galileo's move, a defining turn

Galileo exponent of a new zeitgeist[173] focused on practical experiments[174] thereby noting begin, intermediate and end values. This allowed comparing different settings or the

[170] Anton-Hermann Chroust. 1966.
[171] As for Hobbes in the Leviathan (1641) book 1, chapter 7. For a short history of the term, Humphrey, chapter 16.
[172] Cf. Locke in An Essay of Human Understanding, book 2, chapter 1, section 19 (1689).
[173] Figures like Oresm, G. Bruno, R. Bacon prepared the ground.

same setting under different circumstances. The importance of this cannot be valued enough.

In those days an Aristotelian atmosphere reigned in which objects were considered as emanations of potencies driven to realization. So the dominant tone was one of dynamics. The world was a tangled web of turbulences emanating signatures or signs of the divine will and as such providing the perceived environment with meaning. Galileo's representation in the guise of numbers which could be compared provided a model allowing prediction of the results of organized technical operations. The world until then explained by the will of God became controllable by practical human intervention.[175] Nature became a book written in the language of mathematics.[176]

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[174] A degree of relativity is in order. Galileio also made use of thought experiments in some cases executed by others. The falling objects from a tower have been executed by Christian Huyghens in the Netherlands. The fall of objects in vacuum was of the experiments executed on the moon thus quite recent.

[175] Contrary to the popular version that Galileo got prosecuted because he defended a heliocentric approach, the decisive reason is different and relevant for our story. Heliocentrism was not an extraordinary idea. It got also considered by scholars in the Vatican itself. Margolis even notes that by the time that Galileo's Dialogue appeared there were no Ptolomaic left (1987:277/282). The breakpoint was not even heliocentrism at all but the tides. This aside, the real issue was that undertakings of that kind had to be considered as no more than models or instrumentalities in calculations. The final and definite truth found expressing in the bible as the word, as the signature of God. Apart of his arrogance and audacity getting parties on their nerves – he knew the pope as a friend from college, when proposing his contribution in which he took over the model of Copernicus; he insisted that it pictured how it really was, contrary to the version of the church. With this he actually valued the model proposed above the bible, an act of heresy. But with this also - and of importance for the actual context, he judged the scientific approach above the points of view offered by religion. For an interesting elaboration of the subject, Margolis, 1987.

[176] Understanding the world came in three steps. The first was realized by deciphering the bible as the word of God, a task only within reach of the clergy. The second came down to an understanding of the will of God by deciphering the book of nature written in the language of math. Descartes provides a good example for this. And finally, at that

But important in all this is that Galileo did not need the potential attributed to objects. He only made use of the dimensions of an object which could be measured. He did not even abstract the potentialities in a voluntary way; he only discarded these as obsolete for the purposes he had in mind.
His approach was successful in the perspective of manipulation of the environment. But that approach resulted in a redefinition of the object from an entity filled with tension to an inert unit characterized by measurable dimensions. It should be clear that Galileo had no intention to redefine the character of the concept of an object. It followed in a natural way from the success of his approach.
And, probably superfluous to state: this is actually the way we today understand an object: an inert unit mainly defined by measurement.
But what is the importance of this for the concept of mind as a project in progress?
Galileo discarded all dynamic characteristics but these therefore did not vanish. It could be accepted that for instance a bloc of marble did not naturally incorporate the figure of an athlete or a Venus. But what about plants growing? The progression of growth could be measured day by day however the force-dynamic of the growing itself escaped the act of measuring. What about felt emotions or perceived qualities as in seeing colors? They remained experienced but somewhat orphaned; to which aspect of life could these be attributed? This way they tacitly became part of the realm of consciousness. It became a part of mind which only in 1866 received a proper indication "quale or qualia" by Charles Sanders Peirce and later in 1929 picked up by Clarence Lewis. It became most known by Nagel asking the question "what is it like to be a bat?"
Galileo's move got mentioned here in relation to the appreciation of the mind.
It deserves to be stressed that apart from the introduction of the invariable or essence by the "Greeks" this "move" is the second important instance in defining the trajectory of the Western culture. While figures like Oresme and Roger Bacon prepared the ground, Galileo signified the definite onset to the successful scientific method.

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time still to come was to understand nature in a direct way. Locke for instance left God out of the equation.

From Fremd to Selbstzwang

Galileo's move had nothing directly to do with the formation and the meaningful content of the mind. The effects of his approach had however. In the same sense there were other forces at work which would put a stamp on human behavior in general and the further conceptualization of the mind in particular. These forces were of military, urban, economic and demographic nature. This dynamic was studied by the sociologist Norbert Elias and published as "The civilizing process" in 1939/1994.

Two major lines of forces would in the end change the pattern of the personality structure.

One consisted in the organization of gangs of mercenaries often executing brute force into trained regular armies ascertaining order and keeping peace. Their interventions suppressed explosions of affect in the public arena. In order to avoid punishment by the military one could better learn to master impulses. This practice of self-control as a psychic trait became a consolidated part of the personality structure. Somewhat exaggerated it could be said that brute confrontation made room for a being well mannered.

The increase of urbanization into ever larger centers of population was the other determining force. On the one hand people had to accommodate in living close together and on the other a division of labor into specialized professions took place. This again required a considerable effort in self-restraining at the same time raising the effort to attune with the particularities of others.

As such the two forces complemented one another. There is the external pressure to behave oneself and there is the need to self-restraint in order to attune to the behaviour of others. In this Elias observes a transition from "Fremdzwang zu Selbstzwang"[177]. Courtly rules – rules esteemed proper for a court, become the stepping stone into what would become common politeness. Direct action expressing personal interest is gradually replaced by behaviour aimed not to disturb the feelings of the other.

The importance of this is the shift from an interpersonal tension in the public arena to an interiorized but controlled tension within the individual; in short there is a process of interiorization becoming consolidated into a permanent psychic condition. The world experienced shifts in part from outside to inside. Psychic turbulences become private

[177] From outer to self control.

and hidden (inside). It is precisely that same inside which will provide the proper nesting for the mind.

Population year:	800	1300	1600	1750
London	11.000	90.000	80.000	1.335.000
Paris	30.000	270.000	130.000	855.000

From social interconnectedness to individual integrity

There is yet another transition in accordance with what has been mentioned. Middle Age society is characterized by a public oriented social control. People lived in large family-groups governed by interconnectedness and interdependency. This type of structure shifted overtime in the direction of an increasing urbanization as mentioned before and the upcoming of the citizen. The French Revolution as the culmination of that change broke down the old structures and promoted the individual in a new guise consisting of a uninquestionable integrity, property and private life. It is obvious that this supports and strengthens the idea of an inner private life.[178]

From *res communes* to private property

Before agriculture, the idea of private owned land was even not thought of. This changed with the labor invested in cultivating the land. It raised quite evidently a feeling of ownership. In the Roman period lakes, ponds, the shores of it, most of the woods and wildlife were considered to be common (res communes). This got even in part confirmed by the Magna Carta in the 13th century. In the 17th century Locke considered a balance between the commons and private property. His concern got inspired by a tendency which began in the 15th century to privatize and thus to enclose as private what once could be used freely by the community. The importance lies not only in the fact that it happened but that it was part of, at least developed in parallel with the transition observed by Elias.

[178] Again, these are sketches of large scale movements.

Labour becoming a commodity

Another shift has no direct relation to the assumed existence of a mind like instance; however as with the shift from "Fremd zu Selbstzwang" it reinforces the scheme of multi dimensionality facilitating the idea of a mind as an intransitive isolated instance. It is a change contributing to the experience of duality with a radical distinction between the material tangible body and the immaterial ethereal character of the mind.

Whatever the deplorable condition the serf in the Middle Ages found himself in, in a way he was one with his life world. Belonging to the estate of the lord and whatever the poor conditions of existence, he was taken care of. So the experience was that of being embedded and one with the context and taken care of.[179]

With the introduction of the industrial revolution two related changes took place.

In first instance labour changed from an aspect of fate into a tradable, moreover a marketable commodity. This was self evidently accompanied by the loss of being taken care of, the second change. The labourer got alienated from his labour which became a product and his condition of existence became isolated from the nest feeling.

Labour once a dimension of the integrity of the human being became an isolated instance in its own right moreover becoming an object of trade. Recalling the notes on Galileo's move, in the similar sense a transition took place from the Aristotelian potential being an inseparable dimension of the existence of an organism into an ethereal instance bound to the body at the same time sharply distinguished from it.

It could be said that the former transition in the realm of labour introduced a readiness in the mentality introducing a sphere in which the mind in a very similar way transcended the body.

This is not an unfamiliar state of affairs. Since the computer with its character of information processing made its introduction, a lot of daily life is getting understood by that metaphor – the brain as information processing unit or production processes described in terms of flows of information.

This transition might have been a facilitating factor in the understanding of the mind as a free floating instance.

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[179] An all too naive depiction only serving to focus on a shift from belonging to a context into the direction of alienation from it.

Conscience & from transitive to intransitive

It is no coincidence that in the same period the term "consciousness" acquires a new meaning with its own proper name "conscience" (17th century CE). It refers to the faculty of enforcing the moral law by an awareness of what is right or wrong. This requires contemplation on the inner life in contrast to a previous consideration about events and doings in the public arena. Casuistic moral sanctioning behaviour in public i.e. being mocked in the market square even being chained in the stocks, gradually slipped into an internal regulation according to principles the concerned had to know by heart.

It goes with a transition of a transitive condition to an intransitive instance or being conscious/conscience as an act to consciousness and conscience as the product of an instance. In that sense, consciousness and conscience as guises of the mind like instance are from 18th century on becoming installed in the person.[180] In the previous paragraph feelings getting hidden and thus private were mentioned. Here too a shift took place. At first they were kept hidden for the public on a voluntary basis. If wanted the subject was able to expose these anyway but it was his deliberate choice balanced against a probable sanction. Later in history however, feelings of that kind became considered private in an absolute way. The subject could still report the condition of anger or sadness but he was the only and privileged party who could experience what they really were like. Feelings and thoughts acquired the status of being private of nature.

Being able to, changed into an inability.

Soul, consciousness and ratio

Under 'Immortality contributes to the ethereal' got mentioned that soul, mind and consciousness to some degree could be used as synonyms. It is now the moment to specify. Irrespective the historic moment the soul remained considered to be attributed to man by God. On the other hand consciousness in the new meaning of an intransitive instance enabling contemplation of one-self was a feature inherent to man.

[180] Called introspection it even became part of a systematic method of self scrutiny (Wundt, end of the 19th century).

Already in Plato the rational capacity aimed at gaining a glimpse of the realm of ideas transcended down to earth practices. For Luther God provided all man with a divine spark allowing reading and understanding his word. Descartes takes a step further by situating the rational capacity in consciousness. As such soul and ratio gradually shift from a divine provenance into a more secular condition. This also is a development embedded in the changes depicted in other paragraphs.

Reading, the madness of Ambrose

Apart of taking cognizance of laws, contracts and bookkeeping registers reading in the Middle-Ages was foremost trying to decipher God's will by consultation of the scripture. It was a particular task reserved for the clergy. The illiterate acquired knowledge of the word of god by the scenes on frescos and paintings on the walls of the church on the one hand, by listening to the clergy reading out loud. This should not be taken merely as an act of sharing information. It was accompanied by a vivid recitation with mimic, strong intonation and gestures, in a sense a kind of a one man show. But it was more than that; it rather was a reenactment. That was what normally got understood by reading. With this as background it becomes understandable that in the 4th century CE passersby in Milan observing the monk Ambrose reading without the movement of the lips was an act of not to grasp insanity.

The organization of the home

All of these changes responsible for a reorganization of personal psychic architecture expressed in behaviour found also reflection in the organization of the house. With some exaggeration, the layout and the character were very different. Doors were often open with people coming in and out at will. Rooms apart of the cooking and fireplace had no exclusive and permanent function. A bed was in most cases portable and had to be built up every night sometimes isolated from the remaining of the room by the use of curtains.[181] Rooms were connected directly. One walked from one into the other and in order to reach a room further on one had to pass intermediate rooms. In short, the medieval and renaissance home was rather an open house with multifunctional rooms.

[181] The contemporary romantic looking four poster bed has a history.

As Arlette Farge observes in the Paris apartments of the 18th century there was hardly a separation between in and outside.[182] In the following period doors became closed; the visitor was expected to ring or knock. He handed over his calling card and to wait in the reception room. The meeting took place in a semi public room separated from the private rooms of the house where the family resided in intimacy. Rooms opened no longer one into the other but into a corridor. If one was to contact another member of the household he or she would no longer have to pass through the rooms of others. Rooms obtained a dedicated function. These changes demonstrate on the level of the infrastructure the shift from a life style in the public arena to a life privatized behind walls with special politeness rules in relation to public life. Psychic and housing architecture seem to run in parallel and testify of a profound change in public and psychic life.

Perception, from out to in to in to out

Recall that for Aristotle something existed as the junction of matter and form. In perceiving the sense organ only caught the form. So what is getting perceived is actually a part or dimension of the external world. This implies a direct correlation between experience and universe. Near the end of the Middle Ages and the beginning of the Renaissance period the practice of mathematics became ever more influential. The truth became increasingly generated by calculation rather than by perception. As Galileo observed the senses are prone to deception while reason with mathematics at its core opened the most reliable path to true knowledge. The scholastic scholar oriented the focus to the outside world presenting him what was really out there. The later scholar turned inside working on calculations in order to generate a true description of reality. So here too there is a reorientation from the outside to the inside. All these elements are of course only dimensions of a general reorientation resulting into the installation of an inner space. It is a telling act to mention that Descartes' insight demonstrates the pinnacle of this movement.

[182] Farge, A.(1968) In 'A history of private life', 5 volumes offering a rich overview of the common daily life through history.

Luther's crowbar

Let us pay attention at another remarkable fact.
In the 5th century BCE based on contact with foreign peoples (wars) new religious ideas got introduced into Greece. Worshippers expected that rituals leading to exaltation would bring them in close contact with the realm of the divine. The idea of getting closer to the heavens, the heavenly Forms in that case, influenced Plato. He however rejected the method of exaltation and opted for the path opened by reason. By this the idea of opening the ultimate truth by reason got firmly established.
Another quite different point of interest is about the bible. The book had literally to be taken the expression of God's will. Since man demonstrated his vanity by building the tower of Babel reaching the heavens, the meaning got veiled by the anger of God. Only the clergy was considered wise enough to decipher the holy texture.
Long story short, in the revolt contesting the privileged position the clergy had appropriated, Luther an Augustinian monk, claimed that God provided all man with the capacity to understand the scripture. That capacity was the spark called ratio[183]. This point of view had actually been taken by Averroes four centuries earlier but it was only with Luther's intervention that ratio took such a prominent position.
Apart of the fact that this lead to the translation of the bible, it added in an explicit way an inner capacity with, in the actual context, the stress put on "inner".

The changing appreciation of the faculty of ratio

In line with Luther's crowbar there is another shift to be brought under the attention.
Plato recognized the value of the ratio as the preferred method to activate reminiscences of ideas, the ultimate and only reality. Recall the allegory of the cave in which perception merely realized shadows. Of importance is the fact that ratio refers to a method to be executed. From that moment to Luther spans a window of time of nearly two millennia of which more than twelve hundred years under the almost exclusive

[183] Until then the term was mainly in use in the context of mathematics as the relation from one quantity to another. The spreading of the idea of a capacity called ratio should be understood in the sense of spreading memes. It was a new way of thinking which became taken seriously.

dominance of the Catholic Church until Luther's intervention. The Catholic institution also recognized the faculty of ratio but instead of a method to get in touch with the realm of ideas, in this case it was exclusively meant to contemplate God, a prerogative of the clergy. It also bore more the character of something which overcame the clergyman, a condition he had to surrender to rather than a practice to perform. As mentioned in the previous paragraph Luther redefined it as a capacity in reach of all. This broke the exclusive character. The next step got taken by Descartes. Ratio remained tied to a godly provenance but no longer restricted to contemplating the divine. Matters of nature got considered by this broadening the scope. It also became more and more some activity to engage in instead of something one surrendered to. A step further again was taken by Locke who untied the capacity of God altogether.

In overview:

- Plato: getting in touch with the ultimate reality
- Catholic Church: contemplating God, necessity to read Latin (restricting factor)
- Luther: knowing God's revelation within reach of all (translation of the bible appearing)
- Descartes: considering nature; secularisation of the practice; God present in background
- Locke: no need for God in this activity
- Shift from condition one surrendered to in the direction of an engagement into an activity

This goes with the internalisation referred to in the other scenes.

Descartes' move, dualism and the inner space of spectacle

Understanding Descartes' aspiration

No doubt Descartes' view is still influential for the actual appreciation of the concept of mind.[184] But his approach did not appear out the blue. Some background information should be welcomed.

[184] However no one publicly endorses a radical dualism anymore the concept of mind and the mental is deeply engrained in everyday language reflecting the understanding of man and world. It is somewhat like disproving alcohol at the same time consuming the stuff.

Recall what has been said on the development in ancient Greece. Different explanations required a criterion to decide which argument was paramount. The invariable got introduced provoking in turn the question into the nature of the said instance. "That what was" became an issue provoking a plethora of possible answers. Long story short the world as set of all that was out there became the object or the problem to be investigated. That is the first step. Overtime natural philosophers presented different versions. Some fell back on what the senses brought forth, others stressed the importance of the rational capacity. There was also the tension with the way revelation explained the world and certainly with the way the church forced its version upon the thinking man. Taking a giant step, it all resulted in a slumbering turmoil raising questions about the quality of human produced knowledge.[185] This exposes a shift from the object out there as problematic given in the direction of thinking subject himself becoming a problem. Is human knowledge reliable and what channel should be used, what procedure should be followed to bring forth certain knowledge. It is against that background that Descartes' contribution should be understood. His proposal is an – and as it turned out a most influential - answer to the problem sketched.

Also to be taken into account is that Descartes was a keen mathematician, to be situated on the line of influence onto which Oresme, R. Bacon and Galileo can be placed.[186] Furthermore, remember the actualization of the concept of ratio. And not to discard Descartes was a devout catholic, so God remained present in the scene in contrast to Locke for instance who had no need for divine intervention.[187] Learning about Galileo's condemnation he wrote to Mersenne that he nearly decided to burn all his papers because his own system depended strong on that of Galileo.

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[185] As overall background, it was also a period of endless military conflicts contributing to a general atmosphere of uncertainty.

[186] Mentioned by Leahy in Erneling, 2005:47.

[187] Descartes maintained a relation with Marain Mersenne. The latter a priest, was concerned that the Renaissance scientific approach would explain everything without reference to supernatural powers thus jeopardising religious influence.

The animal dimension[188]

In the model of the human matter, famously coined as res extansa, was inert without powers of whatever kind. The dynamics could be imagined like the workings of a clock, one part pushing the other.[189] Animals were considered as a kind of automaton; the workings could be explained by principles of mechanic and hydraulic.[190] This should however not to be taken all too narrow. In line with Aristotle's view that experience were functions of the animal soul, mental powers of man in so far he functioned as an animal should also be explained mechanical. Descartes was intrigued by the mechanical animals and human figures built by artisans.[191]

Soul, mind and ratio

Concerning the soul or mind[192] his approach is not so clear cut as often presented. Underlying his ideas a struggle raged to rescue the Christian characteristics of the soul.[193]

In his view the soul harbored the power of thought or reason (ratio) separating the human from animal behaviour in experience and in the faculty of language. Animals lack awareness of their own awareness. They lack reflection which allowing the human to respond to novel situations contrary to the animal which only could fall back on

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[188] The two following paragraphs are inspired by Leahy's contribution in Erneling, 2005. On Descartes there is a plethora of sources. I found Leahy brief and at the same time quite clear on the subject.

[189] Remember Galileo's mechanics in which one part pushes the other, a cause and effect relation, in contrast to Aristotles' view on inherent potency driving whatever substance to realization.

[190] The actual understanding is often phrased in terms of information processing by computers. In Descartes' era hydraulics with pressure and flow drew the attention in a similar way.

[191] This underpins the conviction in some circles still accepted that animals are merely more than emotionless creatures. Mega-cattle farms and slaughterhouses on industrial scale are the hardware reflecting this conviction.

[192] May be used as synonymous to soul as the latter embodies the power to think which actually is considered a capactity of the mind.

[193] Leahy in Erneling, 2005:45

mechanic reflexes. Remarkable is that Descartes points out that animals precisely because they lack language cannot think with linguistically formed propositions. The ability to do that is what Descartes considers to the backbone of knowledge i.e. the characterizing feature of reason. It emerged from a language of the mind – the source - situating language firmly in the mind which is of relevance for this outline.[194]

To retain is that mind here equals ratio and as mentioned linguistic propositions are at the heart of it all.

As Leahy observes[195] his project was deeply influenced by the effort of saving his foundational philosophy from Galileo's fate. This is another way to say that Descartes bended his views in order to save the model he had in mind at the same time avoiding a conflict with the church. From this raised a depiction of the soul, the mind or the ratio completely different from the body, almost absolutely divorced from it were it not of the minuscule connection via the pineal gland.[196]

For our piece of the puzzle in the trajectory of the history of understanding the mind Descartes argues that he is nothing but a thinking thing or mind, a thing that doubts, understands, affirms, denies, is willing, is unwilling, and also imagines and has sensory perceptions.[197] From all this a not-material substance seems to appear, a res cogitans – a thing that thinks. It is a substance without matter not occupying space and so not extended and, completely separate from the body

The following is of that importance that I choose to take over the paragraph:

"Descartes was not the first to prove his own existence from mental activity. St. Augustine had said, "If I am deceived, I exist," and from Parmenides is known "For it is the same thing to think and to be." What was new and of profound implications was Descartes' radical reflexivity (Taylor, 1989), his focus on the self and his invention of

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[194] And here of course the link to (the early) Chomsky and Fodor is apparent. Chomsky was well acquainted with the appreciation of and the method to teach language from "les petites écoles de Port Royal des Champs".

[195] In Erneling, 2005:47.

[196] Thomas Willis criticised the very idea because all mammals have a pinal gland too. For a critical discussion of the relation body-mind, Skirry (2006).

[197] Doubt is more serious than it at first sight seems to be as hyperbolic doubt was the ultimate basis confirming his being. "I think therefore I am" expressed the undeniable fact of existing as a self-conscious thinking being.

consciousness as a thing that could be considered, in short that could be studied. Augustine had turned inward and found God. Descartes turned inward and found only himself".[198] With and through this gesture the self became an object of attention.[199]
This illustrates strikingly the turn of the focus in the direction of the psychological self laying the foundations of the study of the mind as part of man. However God remains undeniable present in the background, man here is understood in a secular psychological sense. Locke would go as far as discarding the need of a divine instance altogether.

This resulted into two worlds, one objective mechanical world which can be known scientifically and a subjective world accessible by looking inwardly, by consciousness. Remember the movement into the direction of self controlling. Descartes' organization of the relation outer - inner fits this setting in a quite natural way. At this point appears what Dennett would coin the Cartesian theatre. The inner self looks at a screen onto which the data gathered by the sense organs are projected. From then on the naive direct contact with the outside world gradually got replaced by a state of affairs in which sensations are getting projected in the mind or the consciousness, projections which then in an act of reflection could be examined.[200] The idea or the concept of an inner space available for inspection or rather introspection, took firmly form. It became the natural way of thinking. The experience got objectified, provided with an already existing label "consciousness" and as such acquiring the status of a genuine object of investigation.[201]/[202]

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[198] Leahy in Erneling, 2005:48.

[199] Leahy provides a clear example. Asking you to look at the green colour of a leaf in the Aristotelian approach one would indeed focus at the colour of the leaf in front of him. In Descartes' approach one focuses on the experience of green in consciousness – paraphrasing Nagel "what is it like to experience green?" (in Erneling 2005:49).

[200] I could as well have said "medieval believers in observing the world around them participated in the idea of God" so externally oriented while with Descartes the focus got turned inside looking for ones personal ideas.

[201] Remember the redefinition of the object through the approach of Galileo. It lost its Aristotelian dynamic character and became a thing prone for explicit measurement and systematic manipulation, in short a type of instrumental consideration. In a sense

With his dual model Descartes imposes a defining mark on an already ongoing change in the understanding of the mind.
That change moves from a public regulated life into the direction of a privately governed behaviour, the presence of a (Christian) soul characterized by a seemingly transcendent and aetheric character, and faith getting accompanied even threatened by an ever more becoming influential method of rational thinking.
Something particular should be noticed. Descartes focused on the pineal gland as part of the brain which brings us to another shift in the direction of the way the mind is understood today.

Willis, from heart to brain

For Aristotle the heart is involved in emotion and thinking, a point of view still fostered by Henry Moore in 1652. Even today when someone is getting emotionally moved he

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something similar took place here: the naive direct contact with the world got lost and replaced by a type of consideration which is characteristic for a type of science as sketched out by Galileo. Consciousness, the inner theatre and what happens in that theatre is becoming prone for instrumental consideration. Experience became depicted in an act of reflected, introspective study bringing forth an object of experimental control. Looking back on this turn neither Galileo nor Descartes were as individuals the geniuses sparking the turns of development, they rather were the exponents of a changing Zeitgeist.

[202] At the same time, but this transcends the scope of this discussion, an impossible struggle is getting fired up. What has been reduced to an internal subjective case in the first place, should no become withdrawn from that subjectivity seeking to grant it a status of objectivity. As Leahy comments "Galileo and Descartes made it imperative to study us—to practice psychology—so that the subjective contributions to experience might be subtracted, leaving only objective truth". (in Enerling, 2005:50) Here too history repeats itself. Remind that the introduction of the invariable (hoti esti) was brought forth by the endeavour to escape the undecidability of different arguments put forward. For the seriously interested, Makari's "Soulmachine" (2016) is absolutely a must.

intuitively speaks from the heart and when engaging full heartedly (sic) into some event it is also said that he is taking it to heart. Concluding when emotional turbulences are in play, even to this day the heart remains the first candidate to be mentioned. However it cannot be denied that the brain gained importance in spite of the fact that according to Aristotle it merely evacuated the heated fumes produced by the activity of the heart. On the contrary today all serious work like thinking, deciding and being conscious is attributed to the workings of the brain. For that shift Thomas Willis a medical doctor from the 17th century played a significant role. His anatomical studies of brain and nerves got published as "Cerebri anatome" in 1664. This reference here being short, the effect of Willis' work cannot be valued enough. He provided the fertile soil onto which the whole movement resulting in the actual glorification of the workings of the brain commonly coined brain centrism could take place. This however does not mean that the understanding completely changed.

In 1704, Jonathan Swift in the *Mechanical Operations of the Spirit* noted "it is the Opinion of Choice Virtuosi, that the Brain is only a Crowd of little Animals, but with Teeth and Claws extremely sharp, and therefore, cling together in the Contexture we behold, like the Picture of Hobbes's Leviathan, or like Bees in perpendicular swarm upon a Tree, or like a Carrion corrupted into Vermin, still preserving the Shape and Figure of the Mother Animal while in as late as in 1760 Tristam Shandy mentioned "You have all heard I dare say of the animal spirit". The latter had to be understood as a kind wind moving through pipe like hollow nerves. The basic pattern in which the centre got relocated changed but it took a long time before all prejudices from the past were gone.

As a note in the margin and taking a leap in time, the study of a particular case of brain injury resulting in the loss of regions deemed essential for self-awareness demonstrated that it surprisingly could be realized without a contribution of that organ.[203]

All this has evidently nothing to do with the redirection from out to inwards, but it would in the end provide the home for the thinking mind.

The unobservable particles inside

There is yet another symptom for the turn of the focus inwardly. Galileo provides a clue in "Il saggiatore" or "The Assayer" written in 1623. In that publication he proposes that

[203] Philippi et al. (2012)

what can be perceived by the unaided eye is caused by the workings of particles so small they escape observation.[204] Galileo is also the man using lenses to bring forth a spyglass allowing stakeholders to perceive the arrival of ships at the horizon as early as possible. But the view of a ship is no revelation; everyone knew what a ship looked like. The shocking discovery took place with man like Anthony van Leeuwenhoek en Robert Hooke who turned the contraption upside down and observed life on the scale of the very small never seen before. This is again a turn diverting the attention from the public arena in the direction of the so far hidden world of the smallest of things having affinity with the inner dimension of man also harboring hidden workings. Remember the mentioned Assayer.

Galileo is generally remembered for experiments, the use of lenses and his position in relation to heliocentrism the latter challenged fiercely by the Roman Catholic Church. It deserves to be stressed that his influence reached further, deeply influencing still actual concepts. The understanding of an object as an inert mass prone to be handled (and measured), the suggestion of the workings of the smallest particles contributing to the installation of an inner realm are beyond doubt boundless important.

A brain based mind enters the scene

The following is an excerpt borrowed from "The Soul Machine" by George Makari. I discovered this work only lately and the following page is strikingly relevant in the actual context.[205]

Locke created a new anatomy of inner life, relying heavily on neologisms like "self," a word he concocted, and others with long histories like "idea," "person,"and most critically, "mind." In Old English, *gemynd* and *mynde* first referred to memory alone. During the Elizabethan period, the words were widely employed to denote inner experience. Poets and writers had many a notion in mynd and were of a mynd to act on them. A smattering of phrases employed this meaning —to remind, keep in mind, bear or have in mind, or come to mind.

[204] Cf. Agazzi & Pauri, 2000:7. This was not a unique observation. It is also present in the work of Beekman, Gassendi, Newton, Boyle, Mersenne, Hobbes.

[205] As a matter of fact, the whole of the book is and is as such highly recommendable.

Another connotation also existed. From the earliest days of Chaucer, Englishmen could have another in mind, speak their mind, or set their mind on a task. Thus, personhood might be abstractly associated with this word. William Shakespeare, in one of his famous sonnets, referred to "the marriage of true minds."
A century before Locke, the meanings of this word began to migrate. Having in mind, having to mind, and needing to remind grew to imply the concept of an inner possession, first synonymous with the soul, but gradually different. The Bard anticipated this usage when he referred to the mind as an inner organ: love saw not through the senses, but through the mind's eye. The alchemist and diplomat Sir Edward Dyer composed his poem on the mind as his personal kingdom, man's greatest treasure. And if the mind was a possession, it was something that could also be lost. From at least the 14th century forward, men were said to lose their minds, go out of their minds, or not be in their right minds. Shakespeare wrote of a "mind troubled by deep melancholy" and of futile attempts to "minister to a mind diseased." However in these cases, the mind was still a working synonym for the rational soul. There was no hint of trespassing on holy ground, no apparent contradiction yet between that mind and the soul. However, along with Thomas Hobbes, Thomas Willis, and Gassendi's expositor Walter Charleton, a few intrepid English thinkers had begun to develop concepts and theories of the mind that tilted away from Platonic and Cartesian souls, and headed toward the dangerous belief in the mind as an object of Nature, a thinking *thing*. In 1645, the Catholic Kenelm Digby, from his exile in Paris, alongside Mersenne and Hobbes, published his *Two Treatises*. Sensation, memory, and imagination were material, the result of matter in motion. Lower forms of reason were also bodily, such as the fox's behavior as it stalked a hen. Digby still considered higher forms of thinking to be in the domain of the immaterial, but anyone who considered his example closely would need to wonder. Another early expositor who moved toward a natural mind was the English doctor trained in Leiden, Richard Burthogge. He shared many of Locke's political concerns and wrote his 1674 *Organum vetus et novum, or a Discourse of Reason and Truth*, to forward the belief that the mind clothed its sensations with subjective "notions." Anticipating Immanuel Kant, Burthogge concluded that reality itself was not knowable, and claims of absolute knowledge simply demonstrated a diseased mind, one filled with prejudice. Sanity consisted of a freedom from the delusions manifested by philosophical enthusiasts like Paracelsus or theological ones

like some Dissenters. Later, Burthogge would propose the Platonic idea that pure mind was God, but the doctor would also argue that in humans the mind was a thing impure, one merged with matter.
These were some of the gestures taken toward the notion of a brain based mind, one that obeyed the laws of matter and somehow also had active powers to think and will.
(Makari, G. 2016. The Soul Machine; p.106/7)

The shift in the appreciation of art

Until the 18th/19th century the goal of a painting was to depict what was seen. The painting of a mountain or of a family was meant to appreciate what was really present in the world. This agrees with the older earlier mentioned appreciation of perception, what was seen was what was there.
The more recent form of art does not attach much – if any – importance on what is actually perceived as being out there. It stresses the subjective impression of the artist or as in conceptual art, seeks to provoke a subjective impression in the observer.[206] The outside world as reality got replaced by the world as subjective appearance; the inner turbulence fired up by it becoming the object of attention, if not investigation.[207]
Again the turn inwards is a broad almost all encompassing move.

The mind getting sick & on the unconscious

Turning the gaze inside drew the attention to conditions and processes which always had been there such as drives, emotions and an endless thread of inner speech. And focusing on the inside workings reinforced the attention as in for the first time noticing a small wart, the greater the attention the larger it seems to become. The increase in attention for consciousness clearly appears in the first part of the 19th century. Recall what has been said about the cultivation of self control and the reorganization of the house expressing a tendency of privatization. Johan F. Herbart, psychologist and

[206] Romanticism and expressionism are other strands stressing and appealing on the inner emotional turbulences of artist and admirer.
[207] The goal set is to point out a broad line of development. It is of course a crude simplification.

pedagogue mentions inhibited ideas reaching consciousness only with adequate strength. Fechner another psychologist repeats this idea by indicating a threshold of awareness in relation to the intensity of the sensation.[208] There seemed to be a need coming up to refer to mental states exceeding introspective consciousness.[209] Unconscious as a condition, stronger still even in the guise of an intransitive instance became an issue, an object requiring scientific attention. This rather psychological interest was accompanied by an increase in the interest even engagement in a rather pessimist romanticism à la Schopenhauer or think of "Die Leiden des jungen Werthers" by Goethe. Schopenhauer is interesting as some of his ideas return in Freud such as the limited scope of consciousness, the importance of the will and of sexuality. [210] So far for an all too brief note on the characteristics of the unconscious taking the foreground. But there is more.

In a public oriented community the affects are getting exposed and realized in a public event. With the pressure in the direction of self control the tension between the attitude of politeness demonstrated in front of others and the character of emotions experienced as something happening seemingly internally can take unbearable proportions. That is the point at which what from a psychodynamic perspective would be called repression, came into effect. It opened the gateway into a cultural determined type of psychic contortion.[211] Approached from a medical framework it will be considered psychic illness.

This turn creates a rather particular perspective and opens a realm absent in earlier times.[212] By way of analogy, in the Middle Ages something like a television set was

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[208] There exists other meanings in which "unconscious" as label is used. Piaget for instance thinks of processes not yet (fully) in control by the up growing child and in general people are not conscious of the workings of the digestive system or of blood pressure.

[209] For an in depth discussion: Makari, G. 2008. Revolution in Mind: The Creation of Psychoanalyses. Harper Collins.

[210] For an elaborate presentation: Gardner, S. 2008.

[211] To be distinguished by abnormal – out of the normal – behaviour caused by anatomical defects.

[212] Foucault, M. 1965. (Original in French: 1961. Histoire de la folie à l'age classique – Folie et déraison. Paris: Plon). Also *History of Madness*. 2006. Unabridged, Khalfa.

impossible to be thought of. In the same sense the type of the so called psychic illness could not be thought of neither.[213] It got installed in a particular socio-cultural setting. This bears implications for the applicability of the so called psycho dynamic approaches when projected as an explanatory framework onto subjects having lived further back in time (psychohistory).

A culture of culpability

Already with the work of Norbert Elias the shift from external to internal – self – control has been mentioned. This goes with the previous passage on the inner unconscious workings. But still another mindset is playing an important role. Christianism is characterized by atmosphere of guilt and humbleness. In medieval times this got exposed by publicly doing penance, even chastise. With the mentioned shift it gets more and more a case of inner feelings, an intrusive condition of remorse. This is not the place to go deeper into this important subject but it cannot be left out altogether

Notes on the installation of an inner (Toulmin) theater (Dennett)

Toulmin (1979) draws attention to a remarkable difference.
"…scientifically minded writers of the seventeenth and the early eighteenth centuries have *introduced* into our ideas a quite special kind of clarity. Their vision of mental life as if carried on in a totally enclosed movie theatre located somewhere in the depths of the human brain…"[214] The idea so he explains is based on the confusion of inwardness and interiority. Cutting corners, we know that the gastric system for instance is situated inside the volume contained by the skin. But there is also another understanding of "inside". Toulmin refers to Newton writing "Is it not the Sensory into which the images

[213] That type of disturbing behaviour was considered to be a sign of being possessed bye evil spirit. That condition actually was proof that the soul existed – it could become possessed.
[214] Stressed "introduction" – it has been introduced (!) and, observe the period mentioned by the author, 17th – 18th century.

are carried through the nerves that there they may be perceived…"[215] Our minds are imprisoned from birth in the depths of our brains, Toulmin concludes. Our mind goes on in the interior framed in an actual version: the immaterial mind is in some way brought forth by an internal computer and this depiction does not help at all to eliminate this misconception.
There is a radical difference between putting the finger on an internal location as in the case of the stomach and ascribing workings and effects to the inside.
Criticizing the Cartesian and for that matter also the Lockean Theatre Dennett is absolutely clear.[216] It is a logical construction. I would like to add: it is a metaphor, nothing but a metaphor.[217] There is no such thing as an inner space in which images can be seen. It is no more than a colorful way of expression as in the sentence "a camel is the ship of the desert". A camel is not a ship neither is the desert the ocean. In case of the mind, this is an illustration of a fallacy of misplaced concreteness. Some experience has a name so something substantial of that kind has to exist. Let's be serious, where is that secret space that not can be found?

Introspection in developmental psychological perspective

Piaget argues the attention of the child for an inward life – the so called act of introspection – develops only during the school years. This is linked to the transition of primitive wordless perception to the perception of objects guided by words, in which the object perceived receives an extra dimension of meaning. In tandem with that what the child experiences wordless in the cultural context he shares with his educators, that experience is getting enrobed in words, it becomes named in an explicit way and by this gaining saliency.
It might not be overlooked that developmental psychology draws from two contexts. In broad perspective it describes developments any child goes through irrespective the

[215] The quote has been shortened for brevity. Further Newton here respects the Aristotelian depiction in which the ventricles in the brain are the locations were imaginative, cogitative etc. are located. In that sense the sensory image finds an identifiable location.
[216] On Locke, Leahey:2004. On Dennett, 1992.
[217] Cf. Leary, 1990.

historical time slice. On the other hand it also specifies particular historical twists and turns. The children Piaget studied were all embedded in the 20th century. The social and cultural conditions of the Middle Ages were completely different. In that sense what is discussed here is embedded in a discourse in which an inner directed gaze is already culturally installed.

This short note on the development of introspection is added in order to draw the attention that this is a process of culture imposed development different from a seed developing naturally into a flower. If the pressure mentioned is absent, then that particular turn will not take place while the seed once planted will grow without hesitation.

Inner speech

In line with the previous note about the focus on the inner life as an acquired attitude, inner speech or the never ending chattering "in the head", might count as prototypical example of an inner life.

As Ryle in line with Vygotsky observes "The trick of talking to oneself in silence is acquired neither quickly nor without effort; and *it is a necessary condition of our acquiring it that we should have previously learned to talk intelligently aloud and have heard and understood other people doing so*. Keeping our thoughts to ourselves is a sophisticated accomplishment. It was not until the Middle Ages that people learned to read without speaking aloud. Similarly a boy has to learn to read aloud before he learns to read under his breath, and to prattle aloud before he prattles to himself." (Ryle, G. 1949/1990:28; italic added)

In summary

1. First the skill of producing speech in relation to another person (the level of explicit instruction in learning to drive a car)
2. After a lot of practice the so called internalization takes place (the skill of driving becomes automated i.e. processed by the cerebellum)

But in the latter case does it become mysterious taking the guise of an inner voice manifesting itself out of thin air? Of course not, it is an in principle public observable act that has escaped consciousness. That is not mysterious, that is plain and simple what the process of automatisation implies.

Pinker and Jackendoff report an interesting observation "…the inner speech of deaf signers consists of signs rather than sounds" (2005:225). By this they confirm that the initial outer mode determines the forthcoming "inner" mode. Somewhat further on the same page they conclude "But given that inner speech depends on having outer speech (…) we are inclined to think that if anything is a by-product here, it is inner speech."
In spite of Ryle's view on this subject, inner speech was at the time of writing "The concept of mind" 1949 that is, still a kind of a mysterious occurrence as its manifestation could not be observed. This has changed. Sokolov succeeded in measuring variation in tension in the buccal area in the case of public speaking, whispering, inner speech and mental calculations (1972:161). Endophasy needs no longer to be considered an ethereal phenomenon appearing from thin air, but a form of action in principle open for public observation all be it with specialized equipment.
An intriguing but to be honest a rhetoric consideration might be about animals having no language, at least no language of the type the human possesses, do they experience something which might be comparable to a stream of inner speech? Do they have something like an inner experienced life? Moreover do wild children never learned to talk testify of having an inner life?

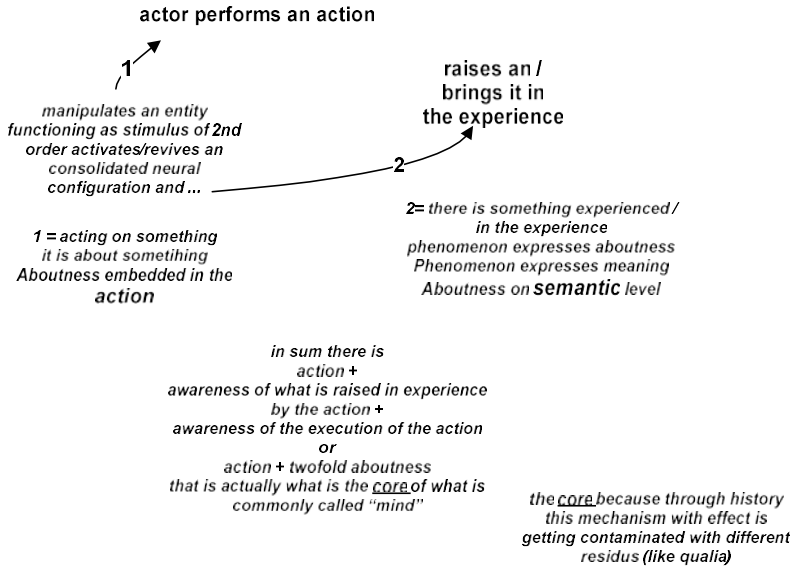
After all, what is that thing named "mind"?

An understanding of "mind" should start from the most basic condition. That is an organism approaching the burdens of the environment in order to survive and to procreate. It will be self evident that the particular embodiment of each and every species determines the way the task is fulfilled. An earthworm perceives another world than a dog or a bird. For the human the upright posture of the body and the abilities of the hands are of decisive importance in that respect. They define the system, the logic construing the appearance of the environment i.e. the way it will be understood and motor approached.
For a non-human animal this comes down to a naked relation regulatory tension.[218] The hominin is grounded in and bound to the situation at hand while the human takes a perspective on something; he is able to consider and to set goals and to value on the basis of an attributed meaning.

[218] A concept borrowed from Watzlawick et al. (1967) who used it in a communicative setting.

This ability reflects in the experience. The hominin *is* - full stop, **while the human** *being* - at the same time realizes an action (a) which is getting experienced (b), the phenomenal dimension.
On closer inspection there are three elements to discern.
In first instance there is an action which secondly brings forth an effect in experience. That could be called a singular reflection. There can be a third element in play. The act of performing that singular reflection can itself be taken as object of reflection thus bringing forth a complex reflection.
But at this point some warning is due. One should be reluctant and not to engage in the discourse depicting a hierarchy: a thought of a thought and so a higher order thought (Rosenthal, 2008). This hides an inviting trap.
What is actually the case? There is an action producing a semantic payload as an effect, the experience of thinking about "x". But x as content can be complex. It can refer to one single element or to more than one, in particular thinking about an apple plus realizing that/thinking about the fact that one is thinking about an apple. Thus here seems to be a complex thought, in the literature coined a higher order thought. This naming suggests a hierarchical construction.
At this point Miller's law (1956) about the magical number seven plus minus two should be introduced. This so called law expresses the limited capacity for processing elements in short term memory. It so happens that the number of the so called levels one is able to keep track of, fall within the constraints of the number mentioned by Miller's law.
One can think of A (1). One can think of being thinking of A (2). On can further think of his thought of being thinking of A (3). From here on further construction is possible but becomes more difficult and soon impossible to accomplish.
The act comes down to keep in memory a number of elements and these in a particular successive ordering. The number of steps is generally limited to four and in an extreme case five. The particular ordering is serial: first this and then that added, followed by a new element added etc. The trap consists of the following reasoning. Because the organization follows a particular ordering – first this and then (later) that – it becomes metaphorical considered *step*-wise as in climbing a staircase hence higher. But here it is not about steps but thoughts while retaining the idea of an upwards direction. This suggests, stronger still provokes the illusion of higher order thoughts, a mental tour de force.

This remark made in order to demystify the illusion of being able to produce up going levels suggesting magical mindful realizations. Reduced to what it actually is, it is nothing else than a set of elements in a flat set but with a particular consecutive ordering.
Left that aside the core of what leads to the experience of a mind can be schematized as follows:


actor performs an action
1
manipulates an entity functioning as stimulus of 2nd order activates/revives an consolidated neural configuration and ...
raises an / brings it in the experience
2
1 = acting on something it is about sometihing Aboutness embedded in the action
2= there is something experienced / in the experience phenomenon expresses aboutness Phenomenon expresses meaning Aboutness on semantic level
in sum there is action + awareness of what is raised in experience by the action + awareness of the execution of the action or action + twofold aboutness that is actually what is the core of what is commonly called "mind"
the core because through history this mechanism with effect is getting contaminated with different residus (like qualia)

So when the "mind" is mentioned it can be understood as the overarching term for a set of actions and the awareness of the effects of these actions as they appear to the performer. It refers in very first instance to the phenomenon.[219] The whole is conceptualized into one and provided with a label "mind".
Taking a step further and by this actually exceeding the goal of this contribution, it can be added that children embedded in a culture characterized by the human condition are not born with but formed to take over and apply the human perspective. That organizes every aspect of life into a scene of mediated action.
Doesn't that all come down to what is called mind?

[219] In an earlier footnote (59) it has already been mentioned that Berkeley, Kant and Husserl state that for the human the world in first instance appears as a phenomenon in consciousness. Needless to add, that this reflects precisely the human condition.

Mind in that sense is not a natural kind existing independent from the human. It is a realization through a specific evolutionary trajectory. Its dynamic core, dealing with tools and composing narratives, remained the same[220] while the version adopted changed accordingly with a changing historic context.[221] The trajectory outlined in this overview is basically reflecting this historical variance in meaning and interpretation.

Repeating Ryle (1949), there is no ghost in the machine. Any organism is instantiating action in an in principle public arena. The human organism is particular in that he developed the skill of controlled execution into an automated art form irrespective the fact that it all developed in an implicit way. The act of raising consciousness escapes consciousness it self. Put it simple the child learned the tricks raising an effect which will be coined consciousness in an implicit mode by being thrown in a world already fully organized by these types of action. In learning to drive a car in the beginning the instruction comes explicit. As the practice becomes routine, the actions are getting executed without ado. In the actual case the initial phase of instruction is not even explicit. The child is thrown in an existing community organized by that type of actions. It is not offered any other perspective; it is emerged in an ongoing practice. What is called mind is based on a particular practice, a particular way of negotiating the environment.
The understanding of "mind" comes somewhat like a misinterpretation of "kindness" as if it were some quality existing in its own right; while "kindness" is an effect of a particular way of doing things in a particular context. In the case of consciousness or

[220] Actually three levels should be distinguished: the basic pattern of mediated action with its particular perspective, the technical improvements to it (such as writing) and the way all this is getting understood or attributed a meaningful narrative (a gift from God for instance). But this would again transcend the scope of the present discussion.
[221] It will be clear that this not the only description of it. There is an abundance of literature on the subject. Mind as understood here spreads over two dimensions. On the one hand there is a set of actions giving rise to a particular type of results or effects and the way these are getting experienced, this could be coined the operational side and on the other the phenomenal dimension i.e. the way we humans feel and think about the mind. The former is of influence on the latter but also the influence also works the other way around.

mind the context is not partial, is embraces the whole of existence or better still it instantiates the human condition.

The trajectory at a glance

The patchwork presented allows a picture of what finally is getting conceptualized into the mind as understood today.[222]

The trajectory takes a start with the so called human condition. It is characterized by the fact that the human gained the ability to project onto the world meaningful narratives at the same time is doomed to do so in order to understand what is happening with and around him. So the basis is the fate to develop explaining and meaning providing narratives, discourses, scenarios or stories.

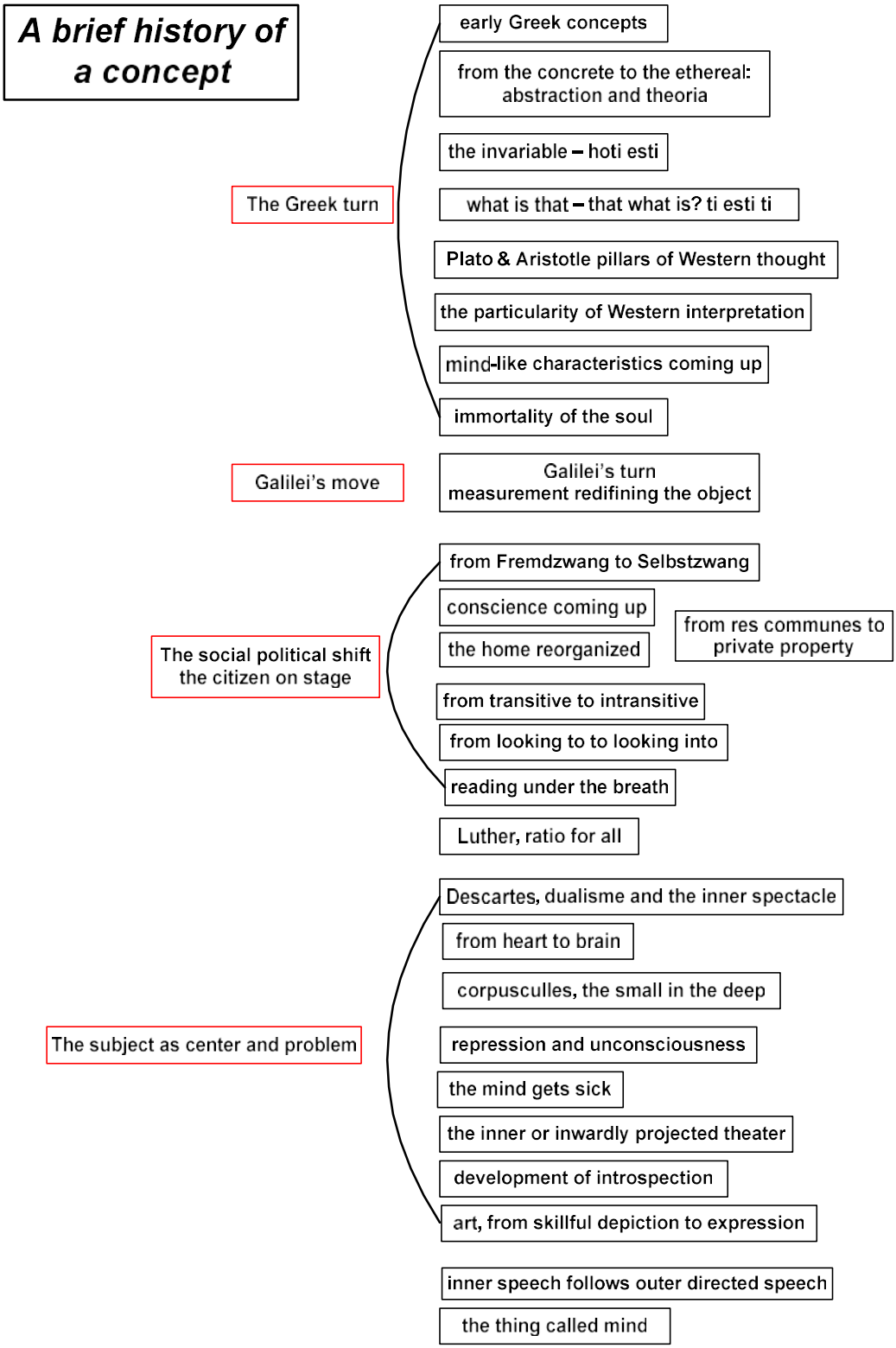
Man has to bring forth a story in a technical sense i.e. he has to do so. It however does not mean that he considers it to be a story. In the semantic dimension or semantics as experience, the story brought forth is an act of existence in the same sense as eating or taking a breath is. Heteronomous causation remains, the world is guided by magical mythical instances.

Entering the historical path, for some reason there seemed to be a need for an independent criterion allowing to judge different versions. The invariable – that what is - became installed. In time it provoked the question into the nature of the character of that what is. Apart of the mind as theme of discussion, this is the pattern launching the specificity of Western thinking. It is a style which overtime will influence most, even dominate other cultures. This is an important factor in its own right but the value for the mind as subject of discussion comes with search for answers on the question into the nature of that what is. For that subject Aristotle and even more influential, Plato plays a role of major importance. He sees the ratio as a mental capacity to unveil the ultimate truth. Add the immortality of the soul – soul, mind and consciousness often used as synonyms – and an esoteric substance distinguishable from the material body takes be it

[222] This complex of influences resulting in a compound organizing filter could be understood as a "Lebensform" - a form of life - as meant by Wittgenstein (for instance Philosophical Investigations: 241 on what is true or false). This approach can also be found in the work of Agamben "The Highest Poverty – Monastic Rules an Form of Life. Last but not least, most of Foucault 's efforts are aimed at exposing history rooted organizing influences.

a vague, form. Galileo focuses on what is prone for measurement by this neglecting the dynamic potentialities suggested by Aristotle. Orphaned these will in time become added to the mind. Luther removes the mind - in that context "ratio" - from the privilege of the clergy and makes it available to all. The mind as a secular capacity gains acceptance in the common appreciation.
Changes in other domains also exert influence. The development of urban concentrations promotes self control. The direction of the development into internalization reflects in the reorganization of the home. Courteous ways of behaving transform into general applied rules of politeness. Conscience becomes an ever more important guide for public acceptable behaviour. In some cases stringent application of self control deteriorates into a conflict with private drives and results into psychic malfunction. In the meantime the focus shifted from the heart as the centre of the person into the direction of the brain.

In short there are a few anchor points marking the history of the Western thought and mind. There is in first instance what could be coined the Greek turn with the definition of the invariable at its center followed by the question into the nature of it. There is further Galileo's move whose practice effectuated a redefinition of the concept of an object. That may well count as the catalyst in the development of the Western scientific approach. On a different track there the reorganization of the social fabric influencing the life of family and individual deeply. And there is the contribution of Descartes, a catalyst again in respect to the problem of the human ability of bringing forth cognition.


A brief history of a concept
The Greek turn
early Greek concepts
from the concrete to the ethereal: abstraction and theoria
the invariable – hoti esti
what is that – that what is? ti esti ti
Plato & Aristotle pillars of Western thought
the particularity of Western interpretation
mind-like characteristics coming up
immortality of the soul
Galilei's move
Galilei's turn
measurement redifining the object
The social political shift
the citizen on stage
from Fremdzwang to Selbstzwang
conscience coming up
the home reorganized
from res communes to private property
from transitive to intransitive
from looking to to looking into
reading under the breath
Luther, ratio for all
The subject as center and problem
Descartes, dualisme and the inner spectacle
from heart to brain
corpusculles, the small in the deep
repression and unconsciousness
the mind gets sick
the inner or inwardly projected theater
development of introspection
art, from skillful depiction to expression
inner speech follows outer directed speech
the thing called mind

As explained in the introduction, the previous contribution being a part of another text, wanted to show how some of the concepts taken for granted are actually templates constructed from out particular historical circumstances.

IV. Books, an overview

There is only one book in print and available via regular bookstores. All other publications can in some form of composition be acquired on the internet on my website (johnfrgilbert.wordpress.com), Researchgate, Academia.edu or the Internet Archive.

English

The forgotten transition (print)
This offers the synthesis of a research project that extended over two decades. A previous project on the cognitive dimension of consciousness resulting in a doctoral dissertation included an onset into a comparison of animal and human cognition. Studying the characteristics of an Acheul type tool it became immediately clear that the type of cognition involved in the making was different to that of an animal. But the hominin in question was in principal an animal so some transition in the perceptive cognitive organization must have occurred. To my astonishment there was no reference about this in the relevant literature, hence the title "The Forgotten Transition". The second part of the same book discusses the possibilities of the manipulation of second order stimuli provoking displacement in space and time in the experience. Both themes are related in a particular way. The second subject could not have been realized without taking into account the characteristics opened by the first. In that sense the second builds further on the first however, in case the second hypothesis might become rejected, this would not affect the value of the first.

Supplement to The Forgotten Transition
This volume only available in digital form contains eighteen chapters so far. Two explore further on the difference between animal and human cognition (1 & 2). Four others (3, 4, 5, 6 & 16) explore the concept of "object". Another five (7, 13, 14, 15 & 18) focus on the dynamics of manipulation as the determining perspective underlying the specificities of the human cognition. Three (10, 11 & 12) focus on matters of

methodology. Three chapters discuss very different subjects. One (9), responds on an often made remark about providing proof for the hypothesis formulated. The other (8) focuses on what is known as Wallace's problem. The human developed capabilities transcend the needs raised by the ecological circumstances. In last instance chapter 17 elaborates on aboutness and declaration, characteristics related to the introduction of objectification.

Unveiling the mind

The mind is a seven headed monster which despite all reservation taken in academic circles seems to enjoy a happy life. There seems to be hardly anyone doubting the existence of it. However as explained in the previous part of this introductory volume the chance is considerable that it is no more than a fiction. This book has three chapters. The first explores the meaning of the concept. The second criticizes a contribution of Suddendorf's on the subject followed by a deconstruction of the concept. The third chapter will argue that the experience of having a mind is brought forth by a process of eduction.

The 5th ape

This is a collection of comments and essays with one thing in common. They all discuss different aspects of the human condition and the assumed trajectory taken in becoming human.

"Beyond the material engagement theory" criticizes this approach and offers a different point of view. "Building cognition, objectification as linchpin" also explains the alternative position taken. Starting from the cognitive position shared with animals most akin, "Script" sketches out a possible trajectory into the human way of cognizing. The fourth chapter "From figure to object" discusses the alleged transition in the way the phenomenal scene is getting constructed. The human is the only species bringing forth narration at will. This is the subject of "Storytelling, setting the human apart". Brain-centrism as the hallmark of the actual mainstream thinking is contested in "The status of the brain". The title of the chapter "Realizing human cognition in the cross-section of life" does not need further explaining. The mainstream conviction honors the goal of describing the world as it is assumed to be out there. But "What is the game (…)?" defends an idea in line with biological motivation: negotiation of the environment in

order to survive. Any version is but a version. This also goes for the version brought forth by an alleged independent observer.
As such it all seems to come down to nothing else than a palace of mirrors. This will be discussed in the piece with the appropriate title "Archimedes and the palace of mirrors". The human condition seems to be the most deep conundrum. However in "Nothing mysterious" this claim will be defied. The human seems to experience the world in full transparency. That is one important commonly held conviction. Another is about the same human having to define his own destiny. That endeavor confronts him with an abyss. "The dazzling deep and the infinite openness" refutes both of these tacit held beliefs. All people anywhere in the world think in the same way is yet another commonly held conviction. As such the thoughts expressed in Western culture are natural in kind. "In the remarkable character of Western thought" will argue that this is a fallacy. That way of thinking is very particular and grounded in historical coincidences. The glorified appreciation for the function of the mirror neural system will be offered as an illustration. The ideal position suggested by science is that of the independent observer. In chapter 13 it will be explained that this position is a factual impossibility.

On the human condition

The On-series bundles contributions on subjects related to the particularities of the human. Some of the articles are also part of other volumes but are recaptured in order to offer a coherent approach of the *human condition* as the subject at hand.

On aboutness

This includes three discussions. The first is about the condition Sartre strikingly coins "cette distance nulle". It is about the seemingly *impossible experience* at the same time being the reporting actor and the subject reported about. The second contribution under this heading discusses the fact that a report is always *about* something, a report offers a *declaration*. The human is the only narrative producing organism. This provides the world as a phenomenon in which he has to find his way. But narratives differ begging the question which is the one to adopt. "Archimedes and the palace of mirrors" discusses this topic and will finally advocate an operational approach.

On images in the head

We seem to share the conviction that humans in the act of imagining actually perceive image like scenes in the head. Referring to mainstream literature in a first part this remarkable experience will be explored. The second part unfolds a constructivist approach on this matter.

On meaning

Without any doubt "meaning" is central in the functioning of any organism, in particular the human able to bring forth his own version of meaningful content. The importance of the subject is reflected by the fact that under this heading seven different contributions are on offer.

1. The hand takes a linchpin function in the way the human negotiates the environment. The dynamics opening possibilities and the structure putting a defining stamp on the way the world is getting understood will be discussed in this rather lengthy part "Hand and imagination".
2. The previous is actually reduced to the core under "Hands".
3. Effort has been made to detect a "grammar" in the skill of stone knapping. There is indeed a system to be discovered in that enterprise however differing from the mainstream attempts. This will be discussed in "The meaning of the grammar of action in stone knapping for human cognition in general".
4. Whatever the development it inevitably starts in the condition the human initially shared with the hominin. In what way could a point of view be opened on that condition which, it has to be stressed, defines the way the world is getting experienced in a meaningful way?
5. The title "Six levels of meaning" is self explanatory.
6. It should in the meantime have become clear that meaning is not a natural kind. It is brought forth in some way. In "In and out of the box" two way of rendering meaning will be explored. In first instance the way we are familiar with and commonly experience as natural (in the box); in second instance a different perspective will be offered.
7. In the previous part appreciating the world in a meaningful way has been explored. In the mainstream view it is taken as natural. This last chapter under the heading "On meaning" will demonstrate that this is actually a particular vision or version defined by historical circumstances.

On reality

Which version does reflect reality? Does the depiction offered by a cosmologist comes closer to it or…? What is the relation of whatever kind of depiction to reality? What does the term "reality" cover?

On reflexion

Reflexion seems an impossible tour de force. Is that really the case?

On storytelling, setting the human apart

Humans are not only storytellers pre-eminently; they are after all the only organisms capable of bringing forth stories. This contribution explores the conditions and abilities to do so. It ends by offering an interpretation of Wittgenstein's famous quote endlessly reinterpreted "whereof one cannot speak, thereof one must be silent".

On the human condition

This too covers distinct contributions.

It starts by offering two related essays. The first discusses the core while the second fathoms the nature of human type of knowing. The latter subject is important because it touches the grounds of the human condition.

It further retakes an explanation already part of The 5th Ape: "Realizing cognition in the cross-section of life". It does because it explains what underpins the actual and commonly shared understanding of the world around us.

On the human psyche

This is a short note on the particular character of the human psyche.

On the infinity possibilities of man

There seems to be no end to what the human can do and accomplish. This article will argue that however the possibilities of the human realization seems to be endless, the whole dynamic in the end is determined by a certain logic determining borders.

On the overwhelming alienation

Pondering existence the human experiences confrontation with the burden to provide meaning to life. An impossible mission it seems as according to Lacan man is trapped in the dimension mounted by language. This state of affairs offers actually a particular depiction, a particular interpretation which has a historical background.

On the object

We do not seem to be very conscious of the fact that a) an object is not a natural kind but a conceptual construct and, b) that is takes a central position in the way the human negotiates the world.

The heading covers four contributions discussing the subject from different angles. In first instance the meaningful content of the concept will be discussed followed by a redefinition actually coming down to a refinement.

Further the question of an object is a natural kind or a construct will be answered. As there seems to be some confusion in the literature the last part will discuss possible interpretations of the concept of "object". It ends with a brief note on the mind-body problem.

On uniqueness

It is said that the human is unique amongst all species. There will be little doubt about that, but the question "unique in what way" however is not always getting answered univocally.

On consciousness

In most of mainstream thinking consciousness comes considered as an emergent property escaping the workings of the brain. The approach chosen here takes a different view. It refers to the whole of a skilled action performed in an in principle public arena and the effects of it experienced by the actor. The different chapters share a central theme but each stands on its own hence can be read independently. The first focuses on the volume of the immediate and local while imagination seems limitless. The second explains what constitutes the human condition, the Western cultural flavour in particular. A third paraphrases Nagel's famous quote: what is it like to be conscious? The fourth unfolds the anatomy of thinking and thought. The fifth continuous this line in considering the human perspective in contrast to Searle's reference to mind which appears as a non committal and free floating ethereal substance. The sixth takes yet one step further in discussing the geometry of consciousness. The seventh ponders upon the question what comes first, the biological condition as defended by Nietzsche or the being conscious according to Husserl? Two notes in relation to Heidegger complete the whole. The first considers the relation between being and being-there, Sein und Dasein; the second sheds light on a difference between Heidegger and the position taken in this volume.

This bundle supplements other contributions such as *Realizing Human Cognition in the Cross-section of Life* and *Realizing the Human Condition, an Action Program*; both are part of the present *ON-Series*.

Making the world appear

Taking into account the abilities of the body, how the world is perceived will determine the way the organism acts upon it in order to reach its final goal i.e. staying alive

successfully. Evidently, how the world is understood lies at the core of this important enterprise.
The question is obvious. Why does the human see the world the way he does or how does he make the world appear?
A first step is taken in considering which perspective is the most appropriate in the interpretation of the input? The second text will explore the role of the hands in all this. In that respect the approach defended by Dietrich Stout will be discussed and an alternative offered.

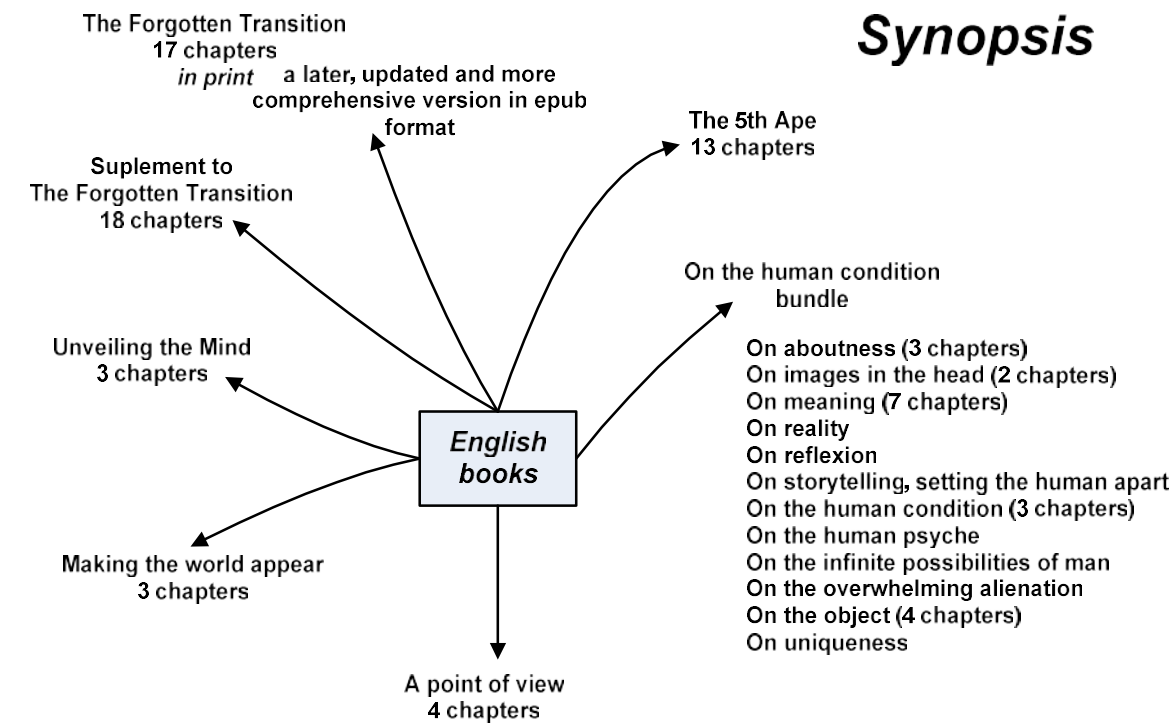
A point of view
The actual contribution meant as an orienting roadmap, clarifying the subjects discussed.

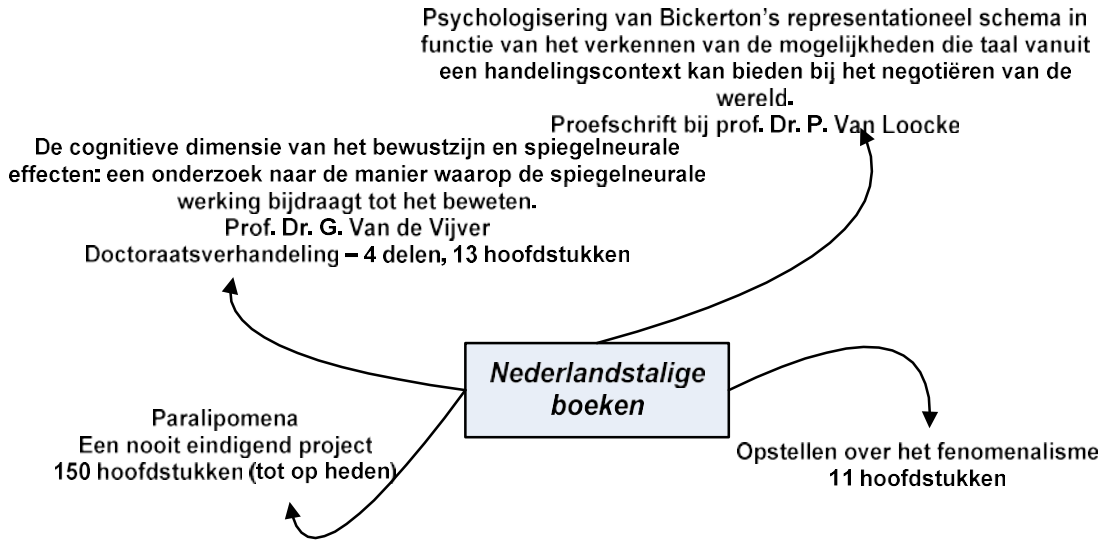
Texts in Dutch
De cognitieve dimensie van het bewustzijn en spiegelneurale effecten: een onderzoek naar de manier waarop de spiegelneurale werking bijdraagt tot de realisatie van het be-weten. Doctoraatsverhandeling.
The cognitive dimension of consciousness in relation the mirror neural effects: an investigation into the way the mirror neural workings contribute to the realization of knowing about. Doctoral dissertation.

Paralipomena
Brief writings, comments, elaborations, clarifications, musings…
It has almost hundred and fifty chapters so far. But it is an ongoing project fed by daily considerations.

Opstellen over het fenomenalisme
Eleven essays on phenomenalism dealing with questions such as if the moon is actually there when not looking; an anecdote once discussed by Einstein. It further considers on how space is getting perceived and on how radical phenomenalism might come. It is also about the organizing principles, on solipsism as eventual consequence and on cognitive closure as structural characteristic. To what degree can a depiction as appearance be considered to correspond with what is out there in the world is another question passing. This bundle is rounded up by discussing a quote borrowed from

Husserl in the “Cartesianische meditationen” where he argues that “Gegenstände sind für mich (…) was sie sind, nur als Gegenstände wirklichen und möglichen Bewußtseins…”. This comes down to the statement that the object as perceived only exists in being conscious.




Psychologisering van Bickerton's representationeel schema in functie van het verkennen van de mogelijkheden die taal vanuit een handelingscontext kan bieden bij het negotiëren van de wereld.
Proefschrift bij prof. Dr. P. Van Loocke
De cognitieve dimensie van het bewustzijn en spiegelneurale effecten: een onderzoek naar de manier waarop de spiegelneurale werking bijdraagt tot het beweten.
Prof. Dr. G. Van de Vijver
Doctoraatsverhandeling – 4 delen, 13 hoofdstukken
Nederlandstalige boeken
Paralipomena
Een nooit eindigend project
150 hoofdstukken (tot op heden)
Opstellen over het fenomenalisme
11 hoofdstukken

Bruges, 7th of September, 2022